University of Alberta

Learning through Online Discussion

by

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A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the

requirements for the degree of *Doctor of Philosophy*

Department of *Educational Psychology*

Edmonton, Alberta
Fall 2005

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For Jennifer.

Abstract

In this qualitative case study I examined five students' experiences and understandings of learning through online discussion. The context of my study was a graduate-level humanities course offered entirely at a distance. Online discussion was a prominent feature of the course. During its 15-weeks, 67 separate weeklong conferences were mounted to support small group activities, whole group discussions, and student-moderated forums. The instructor played only a marginal role in these conferences. My data collection activities included interviews and observations. I read all messages as they were added to the conferences, conducted three, one-hour, semi-structured interviews with each participant, and exchanged emails with the participants several times during the study. I analyzed the messages and the interview transcripts using qualitative content analysis techniques associated with grounded theory, and I employed measures to promote trustworthiness associated with naturalistic research. During our interviews, the students described their activities in the conference and the outcomes to which these led. Their activities included 1) providing others with praise and encouragement, 2) presenting informal arguments, 3) engaging in discursive explorations, and 4) making connections between course topics and their personal experiences. The corollary set of outcomes included 1) engendering feelings of camaraderie and empathy, 2) gathering supplemental information, 3) making the course content meaningful, 4) discovering and clarifying ideas, 5) changing their perspectives, and 6) completing the course on schedule. Contrary to constructions of this technology in our literature, the students did not approach the conferences as forums for critical discourse or collaborative meaning making. To encourage critical discourse or collaborative meaning making, one of three

things needs to be present: 1) an energetic and skilled facilitator, 2) a conferencing system that assumes some of the facilitator's functions, or 3) a learning activity in which small groups engage in purposive collaborative activities.

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Chapter 1: Introduction

Discussion, as an instructional method, is a prominent feature of higher education. There are several explanations for this. Intuitively, discussion is recognized as an important part of intellectual work. As Weedman (1999) has shown, few scholars, artists, or professionals can produce their work in solitude; they need the give and take of debate and discussion with their peers in order to develop their ideas. Theoretically, a wide range of scholars offer accounts of the role of discussion in a diverse set of educational outcomes including cognitive development (Doise & Mugny, 1986; Piaget, 1977; Perret-Clairmont, Perret, & Bell, 1989), higher order thinking (Vygotsky, 1984), conceptual change (Chi, Feltovich, & Glaser, 1982), emancipation (Friere, 1972; Habermas; 1979, Mezirow, 1991), practical competence (Orr, 1996; Wenger, 1998), epistemic development (Belenky, Clinchy, Goldberger, & Tarule, 1986; King & Kitchener, 1994) and understanding (Gadamer, 1977). Hence, discussion is intuitively and theoretically appealing, but what of the empirical explanations for its prominence? Laurillard (1993) states: "One of the greatest untested assumptions of current educational practice is that students learn from discussion" (p. 171).

Laurillard's (1993) point is not that discussion is ineffective, only that the assumption of its efficacy has not been examined sufficiently. Observing learner interaction is complicated, and its goals, for instance higher order thinking or conceptual change, are elusive targets for meaningful assessment. Moreover, conceptualizations of *discussion* are diverse. At one point in the spectrum is Dillon's (1996) definition:

> Discussion is a form of group interaction, people talking back-and-forth with one another. What they talk about is an issue, some topic that is in

> question for them. Their talk consists of advancing and examining different proposals over the issue. The proposals may be various understandings, facts, suggestions, opinions, perspectives, experiences and the like. These are examined for their contribution towards resolving an issue. (p. 12)

This conceptualization provides one thread in the web of definitions of discussion that will be explored in this study.

Despite the ambiguity of the term (Bannan-Ritland, 2002; Wagner, 1994) and the limited empirical support for its use in the classroom, the discussion method found a secure home in higher education with the introduction of *computer conferencing*, a sort of robust email that facilitates textual, asynchronous group communication. By *textual* I mean that message production is limited to the characters on a computer keyboard, and by *asynchronous* I mean that the communication is somewhat liberated from the temporal and orchestral constraints of face-to-face communication. This development invigorated interest in empirical support for its pedagogical efficacy; however, early results, typified by McLaughlin and Luca's (2000) findings, were disappointing:

> Analysis shows that most of the messages in online discussion are in the category of comparing and sharing information. There is little evidence of the construction of new knowledge, the critical analysis of peer ideas, or the negotiation of meaning. The discussions do not appear to foster testing and revision of ideas, which are processes fundamental to higher order thinking. Only a

> small percentage of contributions can be categorized as higher order cognition or awareness of knowledge building. (p. 5)

It is difficult to imagine how the type of interaction McLaughlin and Luca describe could support higher order educational outcomes.

Since the time that McLaughlin and Luca (2000) were collecting their data, many descriptions of productive and valuable computer conferences have appeared in the literature. Thus, McLaughlin and Luca's results do not "typify" computer conferencing as they once did. Among the subset of reports that are trustworthy, a complex picture of computer conferencing emerges. Some students and instructors enjoy the experience, they report that it enhances their learning or teaching, and they look forward to participating in more conferences (Gabriel, 2004; Gray, 2004; Buckingham, 2003; Stacey, 1999; Naidu & Oliver, 1996). Others resent the requirement to participate in or host conferences, complain that the associated work and time demands are onerous, and doubt that the effort is worth the reward (Bullen, 1999; Jeong, 2004; Rovai & Barnum, 2003; Thomas, 2002; Wilson, Varnhagen, Krupa, Kasprzak, Hunting, & Taylor, 2003). Making this picture more complex is the fact that often, these contradictory impressions arise from participants in the same conference. How can such discrepancies be explained?

I have encountered these discrepancies as a student, a learner, a researcher, and an instructor. When I was a student in my educational technology masters program, I participated in many course-based computer conferences. Each one, I felt, took up too much of my time without enhancing my learning. To contribute something insightful to the forums and to follow the jumbled set of messages I needed to attend to the conference everyday. No other course activities were this demanding; yet, for me this effort was not accompanied by a corresponding gain in learning.

In my broader role as a learner, however, discussion—face-to-face, over the phone, or through the computer—was (and is) an important and frequent activity. Much of what I understand about my field comes from the conversations that I have with instructors, colleagues, and friends. These interactions embody the qualities that Dillon (1996) attributes to discussion. They trigger the processes that McLaughlin and Luca (2000) say lend it its pedagogical value, and they give rise to the outcomes that warrant its use (e.g., conceptual change, practical competence, epistemic development, and understanding).

I bring these competing experiences of discussion to my role of adjunct instructor. In my occasional job teaching graduate courses online, I try to remember that students can perceive our online discussions as a place to reflect on and articulate their understanding of course readings or merely as a site for more busy work. To encourage the former orientation, I do three things. First, I divide the students into small groups (4-6 students). I think this allows group members to come to trust each other and provides them with sufficient background information for meaningful interaction (e.g., "You're a corporate trainer, Jane. Would this type of thing actually work?"). It also limits the number of messages students are confronted with when they enter the conference. Further, I think a group of this size is large enough to sustain a discussion but small enough to compel group members to respond to each other.

I also engage in *staging*: I present students with a definition of *discussion*, usually Dillon's (1996), highlight a few of its salient qualities (interactive, purposeful, critical), and provide individualized assessment and feedback during the first few weeks. Students may not understand their role in online discussion as clearly as they do in conventional activities, and the feedback provides guidance. Further, I feel that any assignment, whether it is an essay, a case study, or online discussion, necessitates guidance and feedback.

Finally, I remind the graduate students that many types of peer discussion are valuable, not just informal argumentation with claims, counterclaims, grounds, and warrants. It is equally valuable, I remind them, to share their personal experiences with the course content. When students compose anecdotes about their encounters with course concepts and discuss them with group members it helps them relate material to their prior experiences and apply it to their daily lives. When group members read these vignettes, it contextualizes and situates abstract information from their text.

The outcomes of this procedure are mixed. As one can imagine, providing feedback weekly to each of the 20-25 students I have in my courses is labour-intensive and time-consuming. My students' evaluations of the procedure are mixed. I encounter one group of students who it seems have selected distance education specifically because they want to work independently. I suspect it is these students who drop out of the course when they learn of the conference requirement, who ask if they can complete an alternative assignment or, as happened once, cut and paste others' postings into their groups' discussion. I encounter another group of students for whom the opportunity to interact with peers in an intellectual environment is an important reason for enrolling in post-secondary courses. I believe it is these students who volunteer to moderate the discussion or call me at home to express how much they have enjoyed the course, especially the conference.

Only rarely, however, do I see overwhelming evidence that the computer conference has been a distinct and important enhancement to the learning experience. I have looked for this evidence in my role as a researcher. Over the past six years, I have conducted several investigations into the role of computer conferencing in higher education. I have worked as a research assistant on a SSHRC-funded investigation, conducted my Master's thesis on the topic, and discussed my ideas at conferences and in peer reviewed journals (Rourke, 2002; Rourke, 2001; Rourke, 2000; Rourke & Anderson, 2004; Rourke & Anderson, 2002a; Rourke & Anderson, 2002b, Rourke & Anderson, 2002c; Rourke & Anderson, 2002d; Rourke, Anderson, Garrison, & Archer, 2001; Rourke, Anderson, Garrison, & Archer, 1999; Rourke & Conrad; 2004; Rourke & Lysynchuk, 2000; Rourke & Szabo, 2002a; Rourke & Szabo, 2002b).

The research teams I worked with engaged initially in some basic taxonomonic work (we suggested categories through which researchers could view computer conferencing), followed by some psychometric work (we developed instruments for measuring the categories).

Our work from this period embodied the values of post-positivistic social science articulated by Cook and Campbell (1979): In the taxonomies, we strove for formal symmetry; in measurement, we strove for reliability and validity. Underlying this work was the assumption that reality was objective. In our case, this meant that the messages which students exchanged in the computer conferences had a meaning apart from the intent of their authors or the interpretations of their intended readers. This enabled us to imagine ourselves as detached observers, to identify the meaning of messages, or more accurately, to assign messages to a limited set of categories of meaning that we brought to the conferences.

Gradually, my research within the group began to include, tangentially, some qualitative data collection and analysis techniques. To me, these measures yielded insights that were more intriguing and meaningful than the previous studies, and they provided a better understanding of the phenomena I was studying.

A single example is illustrative. One of the paramount features that theorists see when they regard computer conferencing is the asynchronous (i.e., not at the same time) character of communication. This factor has fuelled theoretical speculation and empirical data gathering since the early eighties and continues to do so. However, open-ended interviews with students and observations of their activities suggest that they may not experience computer conferencing as asynchronous. Students using this ostensibly asynchronous medium have told me about the problems of coordinating their online schedule with others', the problems that internet traffic can pose at certain times of the day when meeting with others, and the importance of posting messages early in a conference week (before all the good opinions are taken). This type of data provides an understanding of computer conferencing that is grounded in the experiences of people who use it.

Reflecting on these types of results, I began to think about Lincoln and Guba's (1985) recommendation that researchers consider the fit between the phenomenon they wish to study and their inquiry paradigm. I have come to believe that the (post) positivistic inquiry strategy may not be the most suitable paradigm with which to conduct exploratory studies of human communication, peer and instructor dialogue, and the role that these play in learning. After studying online discussion for six years, I have come to believe that it has certain persistent features that shape and constrain the manner in which it can be studied, namely a) communication is *indexical*, that is, the meaning of messages are conditional on the context of their use (Suchman, 1987); b) peer interactions are dynamic systems in which students create their own rules and meanings (Cicourel, 1964); c) these rules include *rules of relevance and irrelevance* (Goffman, 1961), that is, interactants decide on the spot which "objective" features of a communicative environment they will ignore and which features they will regard, and d) discussion is an ongoing accomplishment (Ten Have, 1998). A better fit for studying phenomenon with these characteristics is the naturalistic inquiry paradigm.

Research Question

Naturalistic researchers argue that as human beings, we act toward objects in light of our interpretations of their meaning. Their concerns in research, therefore, are to uncover the meaning perspectives of particular actors in specific situations. Accordingly, the general question raised in this study is, what are the participants' experiences and understandings of online discussion? Do the students see themselves engaged in critical discourse with their peers? Do they conceive of the conference primarily as a forum for social interaction? Do they see themselves as merely complying with course requirements for participation? A wide range of understandings is possible. Furthermore, it is important to understand how the students reconcile their conceptualizations of what they are doing in the computer conference with the facticity of its educational nature. Do the students, for example, see informal argumentation as an effective way to clarify concepts in their own minds? Or, is argumentation experienced as competitive and uncomfortable? Is the social interaction motivating and engaging, or is it an inefficient distraction? The students' understanding of online discussion will be nested in a sophisticated and idiosyncratic web of personal understandings—understandings of learning activities, educational technologies, student assessment, instructor evaluation, post-secondary education, peer interaction, and their immediate pragmatic activity, among other things.

Naturalistic researchers are concerned with local meanings, specific understandings, and the particular interpretations formulated by specific actors in specific events. Therefore, they study cases. Merriam (1998) defines *case study* as the intensive, holistic description of a particular phenomenon or event. My case was selected from a higher education setting in which online discussion played a central role. A course with no face-to-face components was chosen to reduce the complexity of the situation. The mode of online discussion that I studied was asynchronous and textual communication.

Significance of Study

The American Psychological Association (APA) (1997), in an influential directive to instructors, argued:

> Learning can be enhanced when students have an opportunity to interact and to collaborate with others. In interactive and collaborative instructional contexts, learners have an opportunity for perspective taking and reflective thinking that may lead to higher levels of cognitive development (¶ 3).

The APA's preamble to this principle characterized it as "systematically researched," yet many instructors and researchers remained unconvinced. A year later, for instance, Pomerantz (1998) was arguing, "little empirical evidence exists to support a relationship between peer discussion and student achievement. The assumption that discussion improves critical thinking is largely untested, especially in higher education" (p. 3). The APA's assertions are also contradicted by much of the data that are collected from computer conferences. Davis and Rouzie (2002) for instance offered the following depiction of student interaction in their computer conference:

> The reasoned deliberation that is one of the essential features of discourse is sorely missing. Any debate about student sent information is minimal; few topics generate a thread of more than two messages and little more than a superficial level of agreement (or for that matter disagreement). There is neither collaboration nor agonistics. (¶ 13)

It is remarkable to find such fundamental disagreement surrounding one our most venerable educational strategies.

Despite this controversy, limited empirical study, and the often negative findings in studies that have been conducted, use of online discussion has flourished. With so many instructors and students engaged in this process, it is important to supplement our veneration of the method with understanding and evidence. After half a century of sporadic research on the discussion method and the recent spurt of investigation of online discussion, it is still unclear how and what students learn from the activity.

Conclusion

Few instructional activities are capable of achieving all of the diverse outcomes proposed at the outset of this chapter, from cognitive growth to personal emancipation. Equally rare is an instructional technique that has been championed by representatives from several educational perspectives, from cognitive constructivists (cf. Doise & Mugny, 1986; Piaget, 1977) to educational anthropologists (Orr, 1996; Wenger, 1998). Usually, educational perspectives and the instructional techniques that they endorse have a finer point on them. Likely, online discussion is useful in facilitating a circumscribed set of educational goals in a particular manner. The ensuing two chapters contain, first, a broad review of potential answers to these questions and, second, a description of the method I used to seek understanding in this area.

Chapter 2: Literature Review

In the acclaimed essay *Why Johnny Can't Think*, Karp (1985) ruminates on the dismal state of education described in *A Nation at Risk* (U.S. Government Reporting Office, 1984). "Instruction in classrooms is almost entirely dogmatic," he charges:

> Answers are right and answers are wrong but mostly answers are short. Assessment calls almost exclusively for short answers and recall of information. The intellectual terrain is laid out by the instructor, and the paths for walking it are predetermined by the instructor (p. 71).

Karp juxtaposes this with what he regards as the self-evident method of imparting higher-level skills:

> The give and take of genuine discussion is conspicuously absent. Not even one percent of institutional time is devoted to discussions that require some kind of open response involving reasoning or perhaps an opinion from students (p. 71)

For Karp, the connection between discussion and higher-level instructional outcomes is axiomatic. He is not alone in this assumption, but is this what educational researchers have found?

In this chapter, I summarize answers to that question by reviewing two bodies of related literature. The first is a general introduction to the discussion method, its role in higher education, and its unique expression in computer conferencing. The second looks specifically at distance educators' conceptualizations of computer conferencing in post-secondary settings—the context in which my study took place. This includes a brief sketch of the views of Holmberg (1983), Moore (1983, 1973), Garrison, Anderson, and

Archer (2000); Laurillard (1993); Evans and Nation (1989); Gunawardena, Lowe, and Anderson (1997), and Murphy (2004a, 2004b, 2004c, 2003). From their writings, I abstract the activities, outcomes, and learning theories they associate with mediated student interaction.

This section begins with the general introduction to discussion as a learning activity in higher education. Students' accounts of online discussion, collected from my experiences as a student, a researcher, and an instructor, are presented along side theoretical accounts that appear in the literature of educational psychology.

Early Research on Classroom Discussion

The empirical study of discussion as a learning activity began in earnest from an awkward perspective. Typically, a discussion condition was compared to a lecture condition for their relative efficiency at facilitating recall and recognition of factual information (e.g., Dubin & Taveggia, 1968; McKeachie, 1978, McKeachie & Kulik, 1975).

Within this framework, several studies were conducted during the 1950s and 1960s. The results of the more rigorous of these studies were collected and synthesized by Dubin and Taveggia (1968) and McKeachie and Kulik (1975). Dubin and Taveggia reviewed 36 studies in which final examination scores of students taught by the discussion method were compared to the scores of students taught by the lecture method. Fifty-one percent of the studies favoured the lecture method and 49-percent favoured the discussion method. This led the researchers to conclude that the outcomes of discussion were, at best, not significantly different from the outcomes of lectures. At worst, discussion was regarded as an inefficient "sharing of ignorance" (Baxter-Magolda, 1992, p. 234) that did not facilitate the assimilation of knowledge.

McKeachie and Kulik (1975) criticized Dubin and Taveggia (1968) for not differentiating between the types of educational objectives measured in each of their 36 studies. They re-analyzed the same set of studies and concluded that the lecture method was more effective for promoting the acquisition of information and lower order objectives, but the discussion method was more effective for promoting retention of information and higher order objectives.

Based on this program of research, Gall and Gall (1990) offered the following conclusion: When educational objectives are content coverage and lower order cognitive outcomes, it is probably more effective to use methods such as lecture and recitation than to have students engage in discussion.

This type of research represents a mismatch between ways of knowing, ways of inquiring, and ways of learning. It assumes a real world and an objective epistemology, which leads to post-positivistic methods of inquiry. Yet, discussion as a learning activity is more consistent with the constructivist epistemology and collaborative methods of learning, which have been associated with interpretivist methods of inquiry. Once researchers began to recognize these inconsistencies, inquiry took a different form.

Socio-cognitive Perspectives of Discussion

The perspective of learning advanced by Piaget, for instance, offered a new perspective through which to view the role of discussion in post-secondary education. Those who are familiar with the work of Piaget (1977) recognize the constructivist themes that pervade his writing. Piaget argued that learners do not passively receive knowledge from authorities, rather they actively create or construct meaning in an effort to bring coherence to their experiences.

Cognitive conflict, perturbation, and dissonance were some of the key elements in the Piagetian model of cognitive growth. Piaget (1977) originally conceived of cognitive conflict as largely a solitary process precipitated by an individual's interaction with the concrete world. Later, he began writing about the importance of social interaction as an impetus for cognitive conflict and growth. This position was developed by Doise and Mugny (1986) who formulated a special social version of the theory of cognitive development, which they referred to as socio-cognitive conflict theory. The underlying assumption of this theory is that knowledge is motivated, organized, and communicated in the context of social interaction. Doise and Mugny argued that when individuals operate on each other's reasoning they become aware of contradictions between their logic and that of their partners. The struggle to resolve the contradictions propels individuals to new and higher levels of understanding.

The basic model for the socio-cognitive conflict studies conducted by Doise and Mugny (1986) and Perret-Clairmont et al. (1989) became the pre-test post-test control group design in which subjects were a) randomly assigned to groups, b) tested to determine their operatory level, c) required to achieve consensus with a discussion partner, and then d) retested to identify any changes in operatory level. Perret-Clairmont et al. report the following results of a series of such studies:

> The responses that students develop [during peer interaction] are cognitively superior to their initial ones. They become capable of a larger integration of viewpoints. They produce new reasoning that can be

> defended with arguments. The learning that occurs involves a complete restructuring of the subjects' mode of thinking. (p. 45)

The well-documented success of Doise and Mugny (1986) and Perret-Clairmont et al. (1989) led Berkowitz and Gibbs (1983) to develop an explicit method of discussion for use in education referred to as *transactive discussion.* The authors define this model as discussion that consists primarily of reasoning that operates on the reasoning of another. If discussion is to be a valuable instructional method, they argued, the discussants must focus on providing justification for their position. In a series of studies conducted over a 20-year period, transactive discussion, of which the key elements are peer-to-peer interaction, conflict, and the justification of reasoning, has been effective at promoting cognitive development, transfer, and higher-order learning (Azmita & Montgomery, 1993; Berkowitz & Gibbs; 1983; Kruger, 1992; Kruger & Tomasello, 1986; Maitland & Goldman, 1974).

This work provides a perspective of learning through discussion that is consistent with the reflections of some online students' that I have interviewed. When asked to describe the elements of computer conferences that contribute to their learning, they often respond in this manner:

> It is in the process of defending my position that I really start to think: Why do I feel that way? Why do I think that way? And, two things can happen: Either I become even more convinced of my position, or I go: "Maybe I haven't thought this through as deeply as I could have or should have." For me, that's what's valuable about the online discussions.
>
> (Rourke & Anderson, 2002a, ¶ 23)

This student could have been reading right out of Brown and Palincsar's (1989) research:

> Social settings provide an audience for an individual's attitudes, opinions, and beliefs, and audiences can request clarification, justification, and elaborations. The sceptic or critic role in group discussions has been accorded special status: By forcing a student to defend or elaborate a solution, a more mature resolution will emerge. (p. 403)

The valuable part of discussion for many students is the intellectual challenge they receive from peers. When students ask each other to justify a claim, point out weakness in a position, or offer counter-proposals, they are forced to re-evaluate their original conclusions much like Piaget (1977), Doise and Mugny (1986), and Perret-Clairmont et al. (1989) would predict.

This process is sufficiently present in computer conferencing that researchers examining other issues have discovered it serendipitously. In a study that a colleague and I conducted (Rourke & Anderson, 2002a) we attempted to demonstrate that computer conferences could provide an environment that would support social communication. Examining the conference transcripts for elements such as *expressions of emotion* and the *use of humour*, we were confronted with comments like the following from several students:

> The social environment is difficult to judge because on the one hand, the contributions were superficially friendly, but there was also an unwillingness to upset this friendly character by bringing up issues that

> might conflict with other's opinions. The character of communication was almost too nice to be useful. (Rourke & Anderson, 2002a, ¶ 15)

If one perceives of the computer conference as a forum for argumentation, its absence is disappointing. Is argumentation a ubiquitous feature of computer conferencing?

According to Jonassen and Cho (2002), the answer is no. Jonassen and Cho analyzed an online discussion among a group of college students as a requirement of their economics course. Regardless of whether the students were discussing well-structured or ill-structured problems, or using argumentation scaffolding software or not, there was little evidence of argument. "Almost no messages stating backings or rebuttals were generated by any of the groups and very few warrants were produced either," Jonassen and Cho reported (p. 13).

These findings should not be interpreted as critical of computer conferencing in particular. D. Kuhn (1991) encountered similar results in face-to-face settings with a broad sample of participants. She asked 160 individuals ranging in age from 14 to 60 years-old to offer their analysis of three ill-structured problems: 1) What causes unemployment? 2) Why do children fail at school? and 3) What causes recidivism? Kuhn was not studying peoples' attitudes toward social issues, however. She was interested in their argumentation skills. Kuhn found that the participants were quick to offer assertions but slow to offer grounds or warrants for their assertions. Less than half of the respondents, in fact, provided evidence for their claims even though Kuhn and her colleagues prodded them frequently as part of their interview guide.

Nonetheless, discussion methods that derive principles from socio-cognitive conflict theory are consistent with students' attributions of the process of learning through online discussion. These methods have received the greatest amount of empirical scrutiny and have yielded the most convincing educational results. However, focusing strictly on the argumentational elements of discussion may under-represent all of the things that occur in computer conferences.

Discussion as Connected Knowing

Socio-cognitive conflict theory explains some of the themes that arise when students reflect on their learning experiences in online discussion. Excluding other types of content misses important ways in which students learn in conferencing. Another type of experience is portrayed in the following reflection:

> The online discussion helped me to learn because it provided a great breadth and diversity of opinion. Sharing experiences and providing analogies is what makes the discussion a valuable part of learning.
>
> (Rourke and Anderson, 2002b, ¶ 30)

This type of peer interaction brings to mind Belenky et al.'s (1986) concept of *connected knowing*. Belenky et al. outlined an epistemological development model similar to the popular model put forth by William Perry (1970). Their model, however, focused on the experiences of female, rather than male, college students. Through a series of longitudinal interviews, Belenky et al. identified a set of five unique epistemological positions evident in the participants' responses. In a manner similar to Perry, the authors argued that the positions represented a progression from less mature to more mature notions of what counts as knowledge, truth, and justification.

In-keeping with Perry's (1970) focus, Belenky et al. (1986) conjectured that progression through these stages is related to a progression through the formal education system. The stages they identified were *silence*, *received knowing*, *subjective knowing*, *procedural knowing*, and *constructed knowing*. As a simplification of their model, women in the initial epistemological stages experience themselves as mindless, voiceless, and subject to the whims of external authority. Gradually, they come to view knowledge as contextual, experience themselves as creators of knowledge, and value both subjective and objective strategies for knowing.

Layered atop of these epistemological positions, Belenky et al. (1986) identified a division in the procedural knowing stage. One set of women was characterized as *separate knowers* and another set as *connected knowers*. Separate knowing was typified by an objective, critical and adversarial stance. This description of *separate knowing* is consistent with the themes developed in socio-cognitive conflict theory (Doise & Mugny, 1986) and transactive discussion (Berkowitz & Gibbs, 1983). Like the archetypal scientist, the separate knower strives for a detached, rational, and sceptical attitude toward inquiry and learning. Clinchy (1989) noted that when it came to peer discussion, the favoured mode of discourse for separate knowers was argument.

Connected knowers are the opposite of separate knowers in their attitudes toward knowledge, their learning strategies, and the types of discussion that they regard as helpful to learning. *Connected knowing* is based on empathy and a willingness to suspend judgement. Whereas separate knowers seek knowledge through a detached and logical confrontation with information, connected knowers seek understanding through personal experience or through an empathetic understanding of the experiences of others. The essence of this type of knowing is a connection with or attachment to the knowledge.

"Connected knowing builds on the subjectivists' conviction that the most trustworthy knowledge comes from personal experience," Belenky et al. (1986, p. 112-113) observed.

In a previous study, I asked students how their computer conference helps them learn. One provided a response that is in-keeping with the idea of connected knowing:

> Listening to somebody who can talk about [the content] as a practitioner, somebody who can talk about [the content] as a pissed-off person who had to pay too much money the last time they had a consultant come in; those are the valuable things in an online discussion." (Rourke & Anderson, 2002b, ¶ 21)

One of the students whom Belenky et al. (1986) came to call connected knowers provided a similar explanation of the value of discussion: "Its great to get another view on the issue from someone who's right there in the situation and who can see it differently from my view" (p. 114).

In discussion, connected knowers do not argue about abstractions or attack and defend positions, nor do they attempt to *prove* that their arguments are *correct*. Rather, they offer opinions and interpretations, which are often embedded in personal experiences. Their questions and responses to each other have less to do with logical reasoning and more to do with the circumstances that lead to particular beliefs. These types of exchanges are used to bring meaning, order, and understanding to their worlds.

Galloti's (1998) description of the behaviour of connected knowers and separate knowers in her undergraduate classes suggests that the former may provide a more appropriate model for discussions among post-secondary students. The latter, as she describes them, are brutally frank in their criticism of others' positions:

> I had asked for a critical analysis of an experiment, and they gave me a list, quite snide in tone, of every possible shortcoming they could think of. Discussions of course readings came to involve eye rolling and expressions of incredulity that this or that author (e.g., Jean Piaget) actually got a paper published in a respectable journal (¶ 3).

Two problems with that type of discourse says Galotti is that it is fundamentally abstract and negative. What Galotti was trying to cultivate, on the other hand, was closer to the discursive behaviour of connected knowers, or as she describes it, discourse "that honours the contribution that a particular participant, however controversial, has made, that shows respect for what they have accomplished" (¶ 4).

Dawson, Taylor, Geelan, Fox, Herrmann, and Parker (1999) identified connected knowing as an outcome or goal in their graduate course in science and mathematics education, which was offered at a distance. One of the key activities for facilitating this goal was online discussion. Dawson et al. suggest that by making room in the discussions for personal narrative, students initially become interested in the facts of peoples' lives, then shift to becoming interested in their ways of thinking. This ability to adopt another's perspective is a central element of connected knowing.

Lundeberg and Moch (1995) report on the use of discussion—in large groups, small groups, and pairs—with a special population of nursing students who were failing their science courses. The instructors felt that cultivating a spirit of connected knowing would help these students "develop conceptual understandings, connect, relate, and integrate scientific information, and learn how to learn science" (p. 322). Using observations, group interviews, surveys, and an analysis of the transcripts of the students' discussions, the authors were able to identify the types of interaction that helped these students to meet their objectives. Contextualizing concepts by discussing them in relation to previous personal experiences and concurrent clinical situations was one successful strategy. Another was the explanations that students took turns providing for one another that followed admissions of uncertainty or ignorance.

Belenky et al.'s (1986) notion of connected knowing offers an alternative to the agonistic model of how students learn through online discussion articulated by Piaget (1977) and Doise and Mugny (1986) among others, and to the instructivist model reviewed in Dubin and Taveggia (1968) meta-analysis.

A provisional answer to the questions of what and how students learn through online discussion in the connected knowing mode can be formulated. The educational objectives are personal understanding and the infusion of meaning into abstract material. One process through which this occurs is the empathetic consideration of others' experiences and tales. By suspending judgment and putting oneself in another's shoes, students come to understand material from a variety of perspectives. In a way, they are learning from experience, not their own, but others'.

Stake (1995) provides a term for the active ingredient that leads to this manner of understanding. He defines *naturalistic generalization* as the conclusions arrived at through vicarious experience so well constructed that the person feels as if it happened to them (p. 85). This type of understanding is best achieved, Stake (1995) argues, through thick description (Geertz, 1973). Unlike the terse expositories of separate knowers (whose function is objective explanation and dependable information transmission), thick descriptions are presented subjectively and invite readers to write their own texts as they read.

Stake (1995), of course, is considering these issues in the context of the qualitative case study as a strategy for learning about a phenomenon and sharing that learning with others. Lincoln and Guba (1989) pick up on his notion of naturalistic generalization and add additional insights about what and how people learn from vivid descriptions of cases:

> They serve as metaphors useful to the reader to stretch and test his or her own knowledge; they provide the information and sophistication needed to challenge the reader's current construction and enable its reconstruction; they serve as 'idea catalogues' from which the reader may pick and choose in ways relevant to his or her own situation; and, most important, they provide the vicarious experience from which the reader may learn, as we do, from all experience. (p. 54)

A case report prepared by a qualitative researcher is different from a message posted to a computer conference; yet, it is not difficult to imagine some of the same educational processes at work in both instances.

Discussion as Narrative Knowing

While Belenky et al. (1986) were working out the distinction between separate and connected learners, Bruner (1986) was developing a similar distinction between two types of knowing. His account embellishes the explanation of how the stories that connected knowers share may enhance their learning, and provides a heuristic set of criteria for evaluating each form.

In Bruner's (1986) terminology, the distinction between the two ways of ordering experience or constructing reality is between *paradigmatic knowing* and *narrative knowing*. The *paradigmatic* mode seeks to establish generalizable truths through well-reasoned arguments. The *narrative* mode seeks to portray something of "the verisimilitude of human intentions" through stories. At their best, Bruner explains, paradigmatic representations are logical, valid, and verifiable. Stories at their best are good, gripping, and believable. In Bruner's (1986) words:

> A good story and a well-formed argument are two different natural kinds. Both can be used as a means of convincing another; yet, what they convince of is fundamentally different: arguments convince of their truth, stories of their lifelikeness. The one verifies by eventual appeal to procedures for establishing formal and empirical truth. The other establishes not truth but verisimilitude. (p. 11)

Bruner noted that much has been written on the subject of paradigmatic knowing, but little on narrative knowing. The same can be said for their respective roles in learning through discussion.

Blake (2002) employed these notions in a study of his students. He began by noting that the attitude of narrative knowing is consistent with the tenets of constructivist learning theories. It encourages the juxtaposition of experiences and collaboration among students. Applying this perspective to course design, Blake complemented the standard reading list of his undergraduate science class with relevant poems and stories, and he noticed changes in his students' learning. Along with their ability to recall information, students were able to recognize applications of the content to their lives. More so than in previous years, he noticed that students came to regard science as a relevant, meaningful, and useful endeavour.

Bruner (2002) asserts that stories are a primordial technology for making sense of experience. For him, writing a story is synonymous with constructing knowledge. As Polkinghorne (1988) argued, "By telling stories we start to construct a meaning with which our experiences gain sense. The construction of meaning arises from the account. It is a fundamental human activity we all do" (p. 21).

Discussion as Composition

Two additional perspectives may be useful for understanding how the compositional aspects of computer conferencing may facilitate learning. One is to compare the activity with journaling, specifically *dialogue journaling*. These are described as "Logs or notebooks used by more than one person for exchanging experiences, ideas, or reflections" (Krol, 1998, p. 4). Yeoman (1995) developed a connection between these and computer conferencing: "Both journals and conferences can be taken up and put down again, bear frequent interruption, and while often intimate and personal, can also deal quite adequately with the theoretical" (p.139).

Abdullah and Gilmer (1997) used dialogue journaling in their undergraduate science classroom in an attempt to move students beyond lower level factual learning to a higher level understanding of concepts and a recognition of their relevance and connection in daily life. Students were required to compose their thoughts about what they were learning, and every two-to-three weeks the instructor read their journals and responded to their reflections. Using several qualitative techniques including analyses of the students' journals, classroom observation, and interviews with the students and the instructor, Abdullah and Gilmer concluded that the dialogue journals increased the students' understanding, appreciation, and curiosity for the subject. The instructor attributed this to increased and continuous opportunities for interaction between his students and himself. Furthermore, he felt it was important that the interaction was non-threatening. "Students are free to say: 'I don't know', or 'I don't understand.' So, they may feel like they don't know something, but they don't necessarily feel embarrassed about admitting to it as they surely would in front of their classmates" (p. 3). The students in the study liked the activity and reported that it enhanced their learning, but they offered few explanations why.

Fisher (1996) incorporated dialogue journals in his undergraduate social psychology course. In his words, the purpose was "to bring students to view course material as something active in their daily lives and more than just information to be memorized for an upcoming exam" (p. 158). Using questionnaires with a combination of closed- and open-ended responses, Fisher identified two benefits that students found in the activity. First, it personalized the course material. "I really felt that I could apply the material to myself and my experiences," reported one; "The entries motivated me to apply the material to everyday events," repeated another. This process led to a second benefit, which was deepened understanding. "It forced me to do some thinking and introspection that I might not have done otherwise. I got more out of the material and felt I understood it better," explained one student (p. 159). Like the students in Abdulla and

Gilmore's (1997) study, these students regarded the increased interaction and feedback with their instructor as an important quality.

McFarland (2001) assigned dialogue journaling to her elementary education students with the goal of helping the students synthesize content. Regrettably, there was little evidence that the activity worked. Of the various levels of analysis that she looked for in the students' dialogue journals, the most commonly found was *literal understanding*. Least common were new insights or heightened awareness. Furthermore, no dialogue developed between the teacher and the students, who often complained about the amount of time and energy that they were "wasting" on the journals.

Mills and Ballantyne (2002) made the transition from hard-copy journals to electronic journals with their undergraduate course in family and child science. They had used the conventional medium to successfully promote reflection and critical thinking but identified some important problems that they thought could be overcome by moving the activity online. Among the problems, Mills and Ballantyne reported that some of the students' journals lacked depth and purpose, seemingly thrown together at the last minute in one sitting by simply back-dating entries. Of additional concern was the discovery that handling and reading the journals was surprisingly labour-intensive. The authors also note that some of their students were vaguely unsatisfied with the activity:

> It's so self contained; you can't share your reflections with other people. 'This is too bad because sometimes it only takes one word from somebody else's mouth and then I'm like, 'wow.' That really helps me reflect more. I think really sharing ideas within the group, verbalizing them, then everybody learns, everybody gains. (p. 27).

Mills and Ballantyne divided their students into small groups, introduced the computer conference as a 'dialogue journal,' and provided the students with an overview of the processes and benefits of such an activity. Students were required to post one message per week. The authors found that the students enjoyed the conferences most when the instructor participated least; therefore, it decreased the instructor's workload compared to the conventional journals. Comments from students focused on the social support benefits of the communicative activity. Comments such as the following were typical: "I liked journaling a lot; it gave me a chance to read what happened to others at their sites. It gave me a chance to know everybody a bit." "I love this journaling. Its like dropping notes to others in your situation. I check on my friends and how they're doing" (p. 29). Mills and Ballantyne did not include any assessment of critical thinking or other higher order outcomes, and few of the students' comments address this issue spontaneously. Further, although the transition to web-based journals appears to have lightened the instructors' workload, it had little effect on the students'. As one commented, "I hated the electronic journaling. It was so hard to keep up with. Its hard for those who do not have a computer and have a busy schedule" (p. 33).

In many ways, the processes involved in computer conferencing are similar to those engendered in dialogue journals. Students are encouraged to write personally and informally about the material they are studying. Often this provides the occasion for reflective thinking and meaning making as the students forge connections between the abstract course material and their daily lives. Also like computer conferencing, it is not just the solitary act of composing, but the interactive dialogue with others that makes the activity worthwhile.

Viewing the conferences as dialogue journals alerts us to the fact that students are not just readers of others' messages or discussants in these forums, they are also writers. Bereiter and Scardemalia (1987) conducted an extended program of research on student writing and offer an explanation about how writing can provoke reflective thought. A preview of their explanation is found in the following comment made by one of Yeoman's (1995) online peers:

> I try to make sure I have a substantial period of uninterrupted time ahead of me before I prepare to participate in the conference. In fact I am very reluctant to say anything unless I think it is a fairly coherent, substantial contribution. (p. 140)

Working in the perspective of cognitive psychology, Bereiter and Scardemalia (1987) elaborated a two-space model of expert writing. One area was called the *content space*, which they described as consisting of a student's construction of the world. "It is the space where one works out opinions, makes decisions, generates inferences about matters of fact, formulates causal explanations, and so on," explained Bereiter and Scardemalia (p. 302).

In their model, the content space interacts with the *rhetoric space*, which consists of plans for achieving various purposes in composition. Bereiter and Scardemalia (1987) used this model to describe the role of writing in learning:

> The key requirement for reflective thought in writing is the translation of problems encountered in the rhetorical space back into subgoals to be achieved in the content space. For instance, recognizing that a key term will not be understood by readers gets translated into a call for a

> definition; search within the content space for semantic specifications leads to a realization by the writer that he or she doesn't actually have a clear concept associated with the term, and this realization sets off a major reanalysis of the point being made. (p. 303)

Much has been written on the subject of writing as a learning activity. Fulwiler (1980) argues that writing is an active process of discovery and reinforcement. "Every time students write, they individualize instruction; the act of writing, even for five minutes, generates ideas, observations, and emotions. Regular writing makes it harder for students to remain passive" (p. 16). Tomlinson (1990) adds that the written material, the product of this process, is concrete and visible and permits review, manipulation, and modification of knowledge as it is learned and put into a framework. Loftland (1974), reflecting on her experiences, testifies to these processes:

> The act of writing causes something to happen. It seems in fact that one does not truly begin to think until one concretely attempts to render thought and analysis into successive sentences. It is the combination of thinking while writing that leads to seeing new ideas or revising the outline when certain sections do not make sense. One is never truly inside a topic until he faces the hard task of explaining it to someone else. It is in the process of externalizing (writing) one's outline descriptions, analyses, or arguments that they first become available to one as things out there that are available for scrutiny. When they become available as external objects –as text—one can literally see the weaknesses—points overlooked, possibilities unattended, assertions unsupported or unillustrated. (p. 192)

In response to calls from industry and from their professional association, Wheeler, Balaz, and McDonald (2002) incorporated writing assignments into their undergraduate engineering courses. The authors felt that bimonthly, informal writing assignments would encourage students to think carefully, develop a better understanding of key concepts, and in general, provide richer educational experiences for engineering students. In interviews, many of the students indicated that the writing assignments allowed them to understand the subject material at a deeper level than they otherwise would have. Consistent with Bereiter and Scardemalia's (1987) model, they report, "the act of writing forced them to think and to understand exactly what they wanted to say, and as a result, their understanding of the material was enhanced" (¶ 4). Expanding on this explanation, the authors argue that the key processes in learning through writing are the organizing and clarifying done as one prepares to write, and the explanations that writers must create for themselves before they can write.

The written assignment, like classroom discussion, is a mainstay of higher education. A substantial body of research is available to those wishing to understand its role in enhancing learning (e.g., Applebee, 1984; Bereiter & Scardemalia, 1987; Fulwiler, 1980; Mills & Ballantyne, 2002; Wheeler et al., 2002; White, 1993). This research shows that the processes in which writers engage during composition are the very processes that are evoked in discussions of higher order learning—analysis, synthesis, reflective thinking, and meaning making, for example. To the extent that students engage in these processes when they prepare messages for their computer conferences, this discrete part of the activity will itself be a valuable one.

Online discussion is a relatively new and unique phenomenon in higher education. To understand the issues that pertain to this emergent technology, I have begun by reviewing bodies of research on analogous subjects. Participating in a computer conference is not exactly like listening to a lecture, engaging in a face-to-face discussion, writing an essay, or keeping a journal. Nevertheless, some of the comments that students make when asked about their experiences with computer conferencing prompt an examination of the literatures on these topics. When reporting their experiences of discussion, both face-to-face and online, some students liken the experience to listening to a lecture or reviewing an instructional audio- or videotape. What they report achieving is lower-level knowledge or comprehension goals. Other times, their descriptions evoke the image of a conversational partner or discussant. Their attribution for how they learn in this mode is through informal argumentation with their peers. What they achieve, ideally, is a restructuring or a *tuning* (Rumelhart & Norman, 1978) of their mental schema. Sometimes, students focus on the compositional elements of their text-bound discussions. Composing an opinion that is appropriately cogent and persuasive exercises the students' higher-order cognitive skills, and it engages them in meaning making. As Fulwiler (1980) asserts: "Often, writing serves the needs of the writer more than the reader. It can be used more to shape our own experience than to communicate the experience to others" (p. 17).

Bruner (2002, 1986), Stake (1995), and Belenky et al. (1986) persuaded me not to focus exclusively on cognitive psychological explanations. I came to their writings when I considered the opinions of students that sound distinctly hermeneutical. These students benefit from the brief stories that others offer about personal encounters with course topics. Others' stories add personal meaning and relevance to the topics.

In the first section of this chapter, I have offered a general overview of the role of discussion in post-secondary education. I reviewed four perspectives of research on this topic and applied it toward an understanding of computer-mediated discussion. In the next section, I move to a specific examination of the ways that this technology has been construed in the distance education literature. I provide a brief sketch of the views of Holmberg (2003, 1985, 1983, 1982), Moore (1983, 1973) Garrison et al. (2000); Laurillard (1993); Evans and Nation (1989); Gunawardena et al. (1997), and Murphy (2004a, 2004b, 2004c, 2003). From their writings, I abstract a) the activities they associate with educational discussion, b) the outcomes to which the activities allegedly lead, and c) the conceptual framework in which activities and outcomes are situated. I begin with a summary of Holmberg's theory of guided didactic conversation, and proceed chronologically through the remainder.

Holmberg and the Guided Didactic Conversation

One of the first to conceive of a role for interaction in distance education was Holmberg (1983). He began writing in what is now referred to as the *first generation* of distance education, the era of correspondence study. Apropos of this system, Holmberg understood learning as "primarily an individual activity" (1983, p. 116). Despite this understanding and the rudimentary communication technologies available to distance education at the time (e.g., print packages, telephones, and postal services), Holmberg was already considering a role for interaction.

Activities

In his theory of distance education, which he termed the *guided didactic conversation*, Holmberg identified two forms of interaction that would be helpful to students studying at a distance. The first he characterized as *real* in which the conversational partners included the student and members of the supporting educational institution. This type of *conversation* was realized when students submitted assignments and received feedback from their tutor. Because it was one of ~~the~~ only avenues of interaction available to distance students, Holmberg urged that student assessment should be more like a conversation than an examination. Students' submissions, he argued, should be treated as a springboard for prescriptive feedback, not simply grading.

Holmberg characterized the second form of interaction as *simulated* in which the conversational partners were the students' existing knowledge, the new course content, and the voice of the tutor that was becoming increasingly internalized. To facilitate his type of interaction, Holmberg (1983) suggested that course material be composed in an accessible, exoteric tone rather than the esoteric tone typical of scholarly texts.

Outcomes

In Holmberg's (1983) theory, three outcomes arise from guided didactic conversations. The first is improved retention of information (he speaks specifically about recall and recognition), which arises from text elaboration. A second, higher-level outcome is the students' ability to weigh new information, to consider it, to think critically about it. A third outcome, also central in Holmberg's theory, are the feelings of study pleasure and motivation that arise as students develop personal relationships with members of the supporting organization.

Conceptual framework

Holmberg's (1983) explanation for the relationship between guided didactic conversation, retention, and critical thinking is steeped in the lexicon of cognitive psychology. His talk of processes such as text elaboration (cf. Ericsson & Simon, 1980), and the interaction between a student's prior knowledge and the course content (cf. Craik & Lockhardt, 1972, Wittrock, 1986) shows him bringing the emerging perspective of cognitive psychology to the field of distance education. This endeavour is consistent with the work of his contemporary Swedish distance educator Bååth (1981). Like Holmberg, Bååth was also developing a theoretical basis for distance education based on the work of cognitive psychologists such as Ausubel (1978), Bruner (1966), and Gagne (1962) (Keegan, 1995).

Holmberg's (1995) explanation for the relationship between the guided didactic conversation and feelings of *study pleasure* are more consistent with humanistic psychology, especially as it was expressed by Rogers (1969). Rogers felt that people have a natural propensity to learn and that a teacher's role is not primarily to instruct, but to set a positive climate for learning, to balance the intellectual and emotional components of learning, and to share thoughts and feelings with learners. Similarly, Holmberg suggested that tutors, councillors, and others at the supporting institution should "attempt to involve students emotionally" and "engage in an exchange of views" (Holmberg, 1983, p. 115, as cited in Keegan, 1995).

Also evident in Holmberg's writing is an awareness of pragmatic (Mead, 1934) and socio-cultural (cf. Vygotsky, 1981, 1978, 1962; Wertsh, 1991) accounts of thinking and learning. The American pragmatist Mead, for instance, defined thinking as an internalized conversation with the generalized other (Cronk, 2005), a definition that is congenial to Holmberg's notion of *simulated conversation*. Mead's thesis, briefly, was that the conscious activity of the mind, what we call *thinking,* is a linguistic activity. And, language is inherently social. Focusing on the communicative genesis of language, Mead saw communication as an exchange of significant gestures—that is, gestures that have the same meaning for the individual who produces them as they do for the audience to which they are directed. In a reflexive move, Mead adds that the gestures are meaningful because they have a similar significance for all parties.

For educational theorists, similar constructions of the mind are associated more commonly with Vygotsky (1981) who addressed pedagogical issues more directly than did Mead (1934). Vygotsky too argued that society and culture are a priori to individual minds. The most often-quoted section of Vygotsky's writing presents this notion:

> Any function in an individual's development appears twice, or on two planes. First it appears on the social plane, and then on the psychological plane. First it appears between people as an interpsychological category, and then within the individual as an intrapsychological category. This is equally true with regard to voluntary attention, memory, and the formation of concepts. Social relations among people developmentally underlie all higher functions and their relationships. (Vygotsky, 1981, p. 163, in Wertsch, 1991, p. 89).

In Holmberg's writing, the ties to socio-cultural or pragmatic perspectives are not as explicit as the ties to cognitive and humanistic psychology. However, his notion that learning involves an *internalized conversation* directs attention to these domains in which the idea originates.

Empirical support

In 1983, Holmberg reviewed a set of studies that tested his theory, and in his assessment "the investigations cannot be said to have given any conclusive evidence in favour of my hypotheses" (1983, ¶34). Garrison (2000) offers a similar assessment of Holmberg's theory, but he suggests that it is an inherent aspect of correspondence study:

> The question arises as to whether an inert learning package, regardless of how well it is written, is a sufficient substitute for real sustained communication with the teacher as both content and learning expert. The role of the teacher was largely simulated by way of written instructions and commentary. In sum, the organizational assumptions and principles of the industrial model and the dependence upon written communication seriously constrain and limit the role of conversation and the full emergence of a transactional perspective. (¶ 29)

When Holmberg conducted his review of the literature, he restricted his review to studies that focused on the use of exoteric course material to facilitate simulated conversations. A systematic body of evidence supports the elements of his theory that build on the principles of cognitive psychology (for example, his claims about depth of processing and its effects on recall and recognition).

Additionally, the notion that students who are studying at a distance find the experience more satisfying in the presence of personal relationships has been a guiding notion in the incorporation of ICTs in distance education (cf. Conrad, 2002; Rheinhold, 1993; Paloff & Pratt, 1999). Woods and Baker (2004), for instance, reported that interaction with faculty created a sense of personalization and customization of learning and helped students overcome feelings of remoteness: They write:

> Numerous studies suggest a positive correlation between relationally supportive online environments and cognitive learning (e.g., Gunawardena, 1995; Wegerif, 1998; Rovai, 2002). Collaboration with faculty and other students can be a strong motivating force for learning (Johnson and Johnson, 1999) and online instructors are frequently encouraged to actively construct a positive social dynamic in parallel with the content delivery (Palloff and Pratt, 1999). (Woods & Baker, 2004, ¶ 18)

Moore and Dialogue

Holmberg (1983) felt that his model of distance education would be particularly effective with dependent, at-risk learners. Moore (1991,1983, 1973), conversely, was influenced by the andragogical movement in adult education, and he developed a model of interaction in distance settings that was predicated on autonomous, self-directed learners. Whereas Holmberg's model arose in the context of correspondence education, Moore's, with its central positioning of two-way communication technologies, is reflective of a second or third generation model (Nipper, 1989). One indication of this development is Moore's rejection of the term *communication,* which some have interpreted to mean the one-way sending of a message from a source to a receiver. Moore preferred the term *dialogue*, which he took to emphasize two-way interaction. An additional distinction between Moore and Holmberg is that the latter was constrained by convention and by technology to figurative uses of the term *conversation,* whereas Moore began formulating a literal conceptualization of *dialogue* in distance education.

Activity

To Holmberg's (1995) two forms of interaction (learner-to-content and learner–to-tutor), Moore (1983) added a third—learner-to-learner. Unfortunately, Moore is vague about the specific types of interaction that count as dialogue between learners. In 1991, Moore offered the following explanation in a review of his model:

> *Dialogue* describes the interaction between the teacher and learner when one gives instruction and the other responds. The extent and nature of this dialogue is determined by the educational philosophy of the individual or group responsible for the design of the course, by the personalities of teacher and learner, by the subject matter of the course, and by environmental factors. (p. 3)

Subsequent studies of his model have been equally equivocal. Chen and Willits (1998) studied Moore's three forms of interaction without providing an operational definition of dialogue, and Cyr and Smith (1990) studied *participation*. Saba and Schearer's (1994) substantive study of Moore's theory included the following definition of *dialogue*: "the extent to which, in any educational program, learner and educator are able to respond to each other" (p. 42).

Outcomes

Moore (1983) argued that dialogue could close the *transactional distance*, which he explained as the subjective feeling a student has of social, psychological, and cognitive separation from the teacher and the subject matter. The function of Moore's concept was to deconstruct unfavourable comparisons between distance education and face-to-face education. In a phenomenological vein (though he does not use this term), Moore argued that a student's experience of distance was more important than an objective assessment of geographic separation.

Conceptual framework

Andragogy, a perspective of adult learning first articulated by Knowles (1990), plays an important role in Moore's thinking. Synthesizing motifs from humanistic psychology with the unique situation of mature students, Knowles formulated a perspective on how best to assist adults in their efforts toward continuing education. Moore saw a fortuitous relationship between Knowles' notion of learner-centeredness and distance education. Unlike immature learners, adults can independently assess gaps in their current knowledge, identify resources that will fill these gaps, motivate themselves to progress through difficult material, and evaluate their progress toward a learning goal. This construction of an autonomous, independent student looking to formal education as a resource for their self-directed efforts was congenial to the form of education offered at a distance.

Empirical support

Moore's theory has been subjected to two systematic empirical tests. Using the path analysis technique, Saba and Shearer (1996) found that dialogue was inversely related to transactional distance. Chen and Willits (1998) studied a course delivered via interactive television and found that in-class discussion contributed to student achievement.

The relationship is complex, however. Some students report that student-to-student interactions are not critical to their success and are the least important form of interaction (Kelsey & D'souza, 2005). Some of the students that Kelsey and D'souza interviewed said that interaction with their instructor was helpful, but the instructor mused: "To be honest, my feeling was that distance students really didn't want contact and were not interested in communicating" (¶ 36). Gorksky, Caspi, and Tuvi-Arad (2004) studied the role of learner-to-learner and learner-to-instructor dialogue in distance education using naturalistic methods. When an online forum was available but not required, they found that students contacted one another only when they experienced conceptual difficulties. They concluded, "theories like Moore's (1993) often assign to interpersonal dialogue an importance that may not be realized in practice (p. 17)."

Garrison and the Community of Inquiry

Garrison (1997) moves the discourse begun by Holmberg and Moore squarely into the third generation of distance education, an era in which information and communication technologies (ICTs) become commonplace. He was one of the first to begin writing specifically about computer conferencing and its role in distance education.

Like Moore (1973), his focus was on adult learners. But more like Holmberg (1983), he was sceptical about the level of independence and self-directedness that one should expect of students. Garrison adopts Moore's concern with several configurations of learner, content, and instructor interaction.

Activity

It is with authors such as Garrison et al. (2000) that *interaction* begins to take on a specific definition in terms of its observable, constituent, conversational actions. Garrison et al. proposed a four-phase process for online discussion and identified conversational actions characteristic of each phase. The phases and processes include:

1. Triggering Event: presenting background information that culminates in a question, taking the discussion in a new direction
2. Exploration: Presenting opinions, sharing anecdotes, contradicting previous ideas
3. Integration: Building on others' ideas, articulating evidentiary hypotheses
4. Resolution: Applying knowledge, testing and defending solutions.

Garrison et al. caution that this is an idealized sequence, and that actual discussions are less formalized.

Outcomes

Critical thinking and higher-order learning have preoccupied Garrison's writing (1992, 2000, 2001), and it is these outcomes that he associates with computer conferencing in distance education. He defines critical thinking as "the acquisition of deep and meaningful understanding as well as content-specific critical inquiry abilities, skills, and dispositions" (Garrison et al., 2001, p. 4). The way to achieve these goals with computer conferencing, Garrison wrote, is through *critical discourse*:

> For a computer conference to serve as an education environment, it must be more than undirected, unreflective, random exchanges and dumps of opinion. Higher-order learning requires systematic and sustained critical discourse where dissonance and problems are resolved through exploration, integration, and testing. (Garrison, 1999, p. 21)

Garrison has identified critical thinking as "the hallmark of higher education" (2001, p. 4), and sees critical discourse in an asynchronous, textual environment as a way to enact this in distance settings.

Conceptual framework

In 2000, Garrison et al. presented an influential theoretical framework for subsequent research and practice with computer conferencing in post-secondary distance education settings. Their framework consists of three overlapping elements. One element is *cognitive presence*, which they describe as the ability of learners to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry. The two remaining elements are supportive of this process. One is *social presence*, the ability of learners to project themselves as real people in a mediated communication environment. The final element is *teaching presence*, which is the amalgamation of instructional design, direct instruction, and discourse facilitation that fosters both cognitive and social presence, and is essential in transforming a group of students and a communication technology into community of inquiry.

Resonating in Garrison's model are the socio-cognitive accounts of learning originating with Piaget (1977) and developed further by Doise and Mugny (1986) and Perret-Clairmont (1989). Essentially, Garrison envisioned a student's unreflective assumptions and inchoate ideas becoming clear, precise, and defensible through agonistic interaction with other students. This is an important departure from Holmberg (1983) and Moore (1983, 1973) who envisioned conversation and dialogue leading to increased study pleasure, motivation, engagement, and thereby achievement.

Empirical support

Like Holmberg's (1983) and Moore's (1983) models, Garrison's model has generated much interest but few empirical tests of its central claims. Garrison has conducted three studies, and there have been others that look for similar relationships (Garrison & Cleveland-Innes, 2005; Garrison, Cleveland-Innes & Fung, 2004; Garrison et al., 2001). Consistent in these studies is the following problem: researchers are unable to assess the relationship between critical discourse and higher-order learning because of the virtual absence of critical discourse. Garrison et al.'s own findings are representative:

> The highest frequency (42%) of coded responses in the transcripts was categorized as *exploration*, the brainstorming phase where people share information. The frequency of the responses fell-off rapidly at the next stage, *integration* (13%). This issue is worthy of special consideration. Even harder to explain is the virtual absence of responses (4%) associated with the highest phase of critical discourse, *resolution.*" (p. 6)

Observers of interaction as it takes shape in computer conferencing rarely report significant instances of critical discourse, dissenting opinion, challenges to others, or expressions of difference. Marttunen (Marttunen & Laurinen, 2004, Marttunen and Laurinen, 2003a, Marttunen, 2003b, Marttunen, 2002, Marttunen, 1998), who investigated this issue across several studies, offers this summary:

> Our results reveal that the majority of students' messages are non-interactive in nature. In particular, real interaction, including responses to responses, is very rare. In addition, interaction between students turns out to be mainly non-argumentative in nature: only a small percentage of students' references to each others' texts express opinions opposed to those of fellow students, and only a smaller fraction indicate grounded disagreement. The results suggest that the pedagogical aim of our studies, to engage students in argumentative interaction, is not realized very well. (1998, p. 397)

Reported by Marttunen, these results are particularly damning because she went to great lengths to encourage interaction and argumentation. This situation makes it difficult to assess the relationship between the types of discursive activity promoted by Garrison et al., 2000 and its hypothesized outcomes.

Evans and Nation and Communicative Action

Evans and Nation (1989) saw a particular use for dialogue in distance education, and it was a use that would be enhanced by the properties of asynchronous, textual computer conferencing.

Activity

Like Garrison (1991), Evans and Nation (1989) encouraged students to engage in a form of dialogue that is agonistic. They too were critical of interaction that consisted only of exchanges of opinion in which:

> students are not compelled to argue the strengths and weaknesses of competing theories. A choice between them is considered a matter of private conviction rather than public justification. The substance of opinions is regarded as separate from the substance of arguments for and against them. Debate, through which the compulsion to support or reject views is made secondary, and holding views is treated as more significant than sustaining them through argument. (p. 134)

Articulating personal beliefs, developing them into public assertions, and defending them against others' criticisms, are the types of dialogical activities that enhance learning according to Evans and Nation.

Outcomes

Evans and Nation (1989) are not concerned with definitions of learning that depict students as accurately representing information that a subject matter expert identifies as important. Distance education they feel is particularly susceptible to engendering this misguided notion of knowledge as authoritative and of content as fixed. The corollary to this is a student that is docile and subservient. Dialogue they argue, should give students a voice, it should empower them, and it should enable them to participate in the social co-construction of knowledge.

Conceptual framework

Foundational to this understanding of dialogue in learning is Habermas' (1979) theory of communicative action. This is an attempt to establish a *conversational epistemology*, that is, a notion of truth and reality based on the unforced agreement of a stake-holding group engaged in responsible dialogue. This is a stark contrast, Evans and Nation feel, to the content-oriented objectivism embodied by other models of distance education, in which, for instance, subject matter experts authoritatively determine what exists and what is true, encode it in course packages, and ask students to master it. Building on Habermas' theory of communicative action, Evans and Nation (1989) argue that peer-to-peer dialogue can rid students of the notion that knowledge is acquired from authorities and replace it with the understanding that meaning is constructed.

Empirical evidence

Evans and Nation (1989) describe a case in which these principles are incorporated into the instructional design of a post-secondary course. Notably, the course concerns curriculum development from the perspective of critical theory, and it is described by Stephen Kemmis (1985), a proponent of the role of critical theory in educational research. Alas, the theme of the article is the gulf between hope and happening— between the ideal of communicative action inscribed in the course's learning activities and the observations of perfunctory participation by the students. Pena-Shaff encountered similar findings in a series of studies in which she investigated the influence of the type of dialogue prescribed by Evans and Nation. In one study, Pena-Shaff and Nicholls reported, "Conflict represented only 7% of the students' total statements, and this was higher than in previous semesters" (p. 259). In a more detailed description, Pena-Shaff and Nicholls report:

> Very few students replied to messages that challenged the ideas they had presented in previous messages. We thought that messages coded as *defending ideas* would be at least as frequent as messages coded as *challenging* ideas, but this was not the case. Messages coded as *defending and reinforcing previous ideas* represented only 1% of the total. In those cases where conflict arose, students just tended to present their point of view and either didn't check back on the discussion or simply did not try to negotiate a common understanding. (p. 260)

Unfortunately, Pena-Shaff found precisely the type of dialogue of which Evans and Nation are critical. As Garrison et al. (2001), Marttunen (Marttunen & Laurinen, 2004, Marttunen & Laurinen, 2003a, Marttunen, 2003b, Marttunen, 2002, Marttunen, 1998), Davis and Rouzie (2002), and Kanuka and Anderson (1997) before them, observers of computer conferences are disappointed to find a virtual absence of critical discourse among students.

Laurillard and the Conversational Framework

Laurillard (1993) is another writer who proposes a role for discussion in distance, higher education settings. She presents a conversational framework. Like Holmberg (1995), her use of the term *conversation* is both literal and figurative. In its first sense, *conversation* connotes the verbal interaction that students have with each other and with their tutors. In its second sense, *conversation* connotes a type of educational cybernetics. In this iterative process, students' knowledge of course topics becomes more and more like their teacher's or their text's as students articulate their understanding of readings and lectures, receive corrective feedback from an authority, and make appropriate modifications. Like Garrison et al. (2000), Laurillard's writing is co-extensive with the proliferation of ICTs and therefore her analysis includes a specific look at computer conferencing.

Activities

Laurillard (1993) proposes a general model of teaching and learning, and she evaluates computer conferencing within this model. Her general model positions the tutor and the student in an adaptive relationship. Tutors and students exchange their understandings of course topics, and during these exchanges, tutors tailor their authoritative, expert presentations to the students' existing constructions. The students modify their constructions so that they become successively more accurate representations of the tutors' (Allen, 2004; Hannon; 2002; Laurillard, 1993).

Computer conferencing supports these exchanges among participants who are unable to meet face-to-face. Interactions between the tutor and the student, like the ones described above, are the type upon which Laurillard's framework focuses. She does, however, see some place for interactions among students. These are presented as secondary in importance however, with Laurillard worrying about students "floundering in mutually progressive ignorance" (1993, p. 172).

Outcomes

When students articulate their understandings of course topics, the instructor has an opportunity to adapt subsequent explanations to these unique constructions. Instructors are also given a special opportunity to assess students' understanding and to identify misconceptions. Similar opportunities for self-assessment arise during peer interaction as students articulate and argue their interpretations. For students, the adaptive interactions with their tutors should lead to an accurate internal representation of course content. Laurillard also reports that students delight at hearing others express the same worries, confusions, and criticisms that they are experiencing.

Conceptual framework

Laurillard's (1993) conversational framework exemplifies an interpretation of teaching and learning that arises in cognitive psychology and in the larger field of cognitive science. In this field, knowledge is understood as a coherent body of propositions that are abstracted from an objective world. The task of instruction is to transfer this representation of reality onto the mind of the student. For much of its history, the educational focus of cognitive psychology has been on explaining formal academic learning (e.g., Ausubel, 1978, Anderson, 1990). Laurillard's shares this concern.

Laurillard (1993) ties much of her conceptualizing to Pask (1976), whose work brings two elements of cognitive science to the process of education—the epistemology of cognitive science (described in the previous paragraph), and the feedback and control processes referred to as *cybernetics* (Wiener, 1950).

The relevant notion of cybernetics is that existing actions are perfected based on the continuous assessment of their current state versus a goal state. Pask (1976) saw in this process an analogue to the coaching that takes place between an adult and child in Vygotsky's (1978) zone of proximal development and to Bruner's (1966) scaffolding. Building on the realist epistemology of cognitive science, he devised a *conversational* *theory* of education. Pask's theory is complex and his writing is dotted with neologisms, but its essence can be conveyed as follows. First, a subject matter expert devises a detailed conceptual map of a topic. Next, he or she (or *it*; Computer Assisted Instruction is quite suitable in this function) presents this representation to students. Students then demonstrate their construction of the topic, and ultimately, through assessment and feedback, students come to recreate the conceptual map accurately in their minds.

Empirical support

With minor variations, this is the model that Laurillard (1993) uses to understand the role of educational technology, including computer conferencing, in higher education. Unfortunately, she has not conducted empirical studies of computer conferencing. Her empirical work focuses mainly on videodisk technology, with the bulk of her writing being of a reflective sort. Allan (2004), however, has also argued that adaptive feedback from a perceptive tutor will always be more effective than the best artificial intelligence tutors: "No simulation or technology is able to give truly intrinsic or fully customised feedback," she declares. "Online tests, self-assessment questions, and other artificial sources of formative feedback cannot provide the degree of depth or insight required for customised learning assistance in the ways a human tutor can" (¶ 11). On the importance of feedback Rowntree (1997) echoes one of Chickering and Gameson's (1987) seven principles of quality undergraduate instruction, noting:

> Personal feedback is the key to quality in education and training. It is what enables us all to learn from our experience. A response from another human being that challenges or confirms our understanding, helps us overcome errors, and encourages us toward new insights." (p.58)

McCollum, Calder, Ashby, and Morgan (1995) found a relationship between frequent personalized feedback and student satisfaction with distance education. Hannon's (2002) research is additionally supportive of this relationship: "Students want (and expect) quick and detailed responses to their questions and concerns, as well as timely, qualitative feedback on their work" she concluded:

> Students in distance learning courses apparently expect active interaction with their teachers. Students who felt that these expectations were met tended to be positive about the course, and about distance learning in general. These expectations can be time consuming for professors and teaching assistants to meet, but there are possible compromises that will satisfy both teachers and students, such as posting ideal responses to exam questions and using a course listserv to answer common questions. Student and faculty evaluations of more recent versions of the online courses reveal that these measures have improved satisfaction with distance learning for both parties. (Hannon, 2002, ¶ 42)

Although the specifics of Laurillard's model have not been investigated empirically, there is support for the principles upon which it is based.

Gunawardena, Lowe, and Anderson and Meaning Making

Gunawardena worked with several of these models in order to understand the role of computer conferencing in the post-secondary distance education courses she taught. From this practical perspective, she encountered difficulties with each of the models: Either they presented ambiguous conceptualizations of *interaction* that were difficult to implement as an instructor, or they were rooted in a "teacher-centred, instructivist perspective" (Gunawardena, Cabajal, & Lowe, 2000, p. 5). To address these limitations Gunawardena et al. (1997) developed a new model. Like Garrison et al.'s (2000) and Laurillard's (1993) models, it arose at a time when conferencing was widespread. It found an audience for whom the distinction between distance education and on-campus education was beginning to blur, and the technologies of distributed learning were beginning to span various educational contexts.

Activities

Gunawardena et al. (1997) believed that ideally computer conferencing could be used to engage students in five types of conversational activities 1) *exchanging opinions, descriptions, and questions*, 2) *identifying and clarifying areas of agreement and disagreement*; 3) *assimilating or accommodating alternative perspectives or suggesting new ones*; 4) *relating this new understanding to personal experiences or course content*; and 5) *applying the new understanding*. Discussion of this sort, they argued, would lead to outcomes that are important in higher education.

Outcomes

Gunawardena et al. (1997) see these activities occurring in a developmental sequence that moves students through a process of knowledge co-construction. The process occurs in five steps which parallel the five sets of activities: 1) *sharing and comparing information*, 2) *discovering and exploring dissonance*, 3) *negotiating meaning*, 4) *testing new knowledge*, and 5) *establishing a consensus and applying knowledge*. Unlike the other models that I have described, the space between *activities* and *outcomes* does not present a large an inferential gap. *Sharing and comparing* *information* or *negotiating meaning*, for instance, are regarded simultaneously as descriptions of the students' activities and as outcomes. Gunawardena et al. (1997) do not postulate intermediate, underlying processes that somehow connect the two. Through conversation and argumentation with their peers and the instructor, Gunawardena et al. argue that students will build networks for subsequent collaboration, enhance the information provided in course materials with additional information and alternative interpretations, and make the topics personally meaningful.

Conceptual framework

This model reflects a social constructivist understanding of learning and instruction. In this perspective, knowledge is a consensus among a community of informed and sophisticated peers (Lincoln & Guba, 1989). It assumes that there are multiple, coexisting realities. Learning then is a process of becoming an informed member of the community. To become part of a community, one has to acculturate to the values, ways of doing things, and language of the community. Koschmann, Kelson, Feltovich, and Barrows (1999) describe the role of online discussion in the social construction of knowledge:

> It is in the process of articulating, reflecting and negotiating that we engage in a meaning making or knowledge construction process. This process can become even more powerful when communication among peers is done in written form, because writing, done without the immediate feedback of another person as in oral communication, requires a fuller elaboration in order to successfully convey meaning. (1996, p. 83)

With its foundation in social constructivism, Gunawardena et al.'s model of computer conferencing is notably different from the previous models.

Empirical support

The activities that Gunawardena et al. (1997) propose for computer conferencing are consistent with raw descriptions of what participants actually do (Mason, 1991). Moreover, the tenets of social constructivism, with its conversational epistemology, are congenial to conceptualizing the use of computer conferencing in education. Nonetheless, the model has received no more empirical substantiation than the other models I have reviewed. Gunawardena et al. (1997) and Anderson (Kanuka and Anderson, 1997) have participated in studies of this model but have been frustrated by a recurrent problem: conference participants rarely engage in anything beyond the lowest levels of interaction (i.e., level 1--*sharing-and-comparing information*). The elements of discussion that are essential to meaning-making and knowledge construction, elements such as exploring dissonance and negotiating meaning with peers and the instructor, are absent. Gunawardena, Carabajal, and Lowe (2001) summarize the results of several applications of the model:

> As the model has been applied to a succession of conferences, it has brought to light indications that many, probably most, conferences do not proceed beyond the lowest phases of knowledge co-construction. Participants share and compare their experiences and viewpoints on course topics but when they find areas of disagreement, instead of negotiating meaning as the social constructivist theory would suggest, they appear to agree to disagree. (p. 8)

One of the studies that Gunawardena et al. are referring to may have been Kanuka and Anderson's (1997) in which the authors report:

> Evidence from surveys, telephone interviews, and transcript analysis indicates that most of the interaction is of a sharing and comparing nature. Dissonance and inconsistency are not actively explored, there is little testing of evidence against experience or the literature, and rarely do participants state the relevance or application of new knowledge that might have been created. (¶ 45)

In a similar study of computer conferencing in an undergraduate setting, Thomas (2002) reports:

> The quality of interaction was insufficient to promote the levels of interpersonal communication necessary for a truly conversational mode of learning. While there was evidence of some interaction with students building upon or presenting arguments against other students' contributions, there was no real co-operative development of ideas between groups of students. (p. 359)

De Laat (2001) found similar results in her content analysis of an online discussion. Using Gunawardena et al.'s (1997) interaction analysis scheme, she found many initiations to which there were no replies. Lopez-Islas (2001) observed that dissonance and the testing and modification of proposed co-constructions were almost absent in the conferences that she studied. Further substantiation of these results are provided by Bonk and Cunningham (1998), Davis and Rouzie (2002), Jeong (2001), Pena-Shaff (in press), Pena-Shaff, Martin, and Gay (2001); Pena-Shaff and Nicholls (2004), and Yakimovicz and Murphy (1995).

Murphy and Solving Problems in Collaborative Environments (SPICE)

Murphy (2000) developed a model of computer conferencing that, like Gunawardena et al.'s (1997), presents an alternative to the teacher-centred, instructivist perspective of teaching and learning in post-secondary, distance education. Murphy stipulates a specific learning activity for which conferencing should be used. As I have in previous sections, I will describe that activity, the types of outcomes with which it is associated, Murphy's account of the relationship between the activities and outcomes, and the empirical evidence that she and her colleagues have brought to bear on the model.

Activities

Murphy (2000) regards computer conferencing as a medium that allows distance education students to engage in purposive, collaborative activities, namely, problem solving. She envisions group problem solving as occurring in a developmental sequence that begins with superficial interaction and culminates in the production of a shared artefact. Murphy has identified six stages in this sequence and a corollary set of conversational actions for each stage (Murphy, 2000; Murphy, 2004; Murphy & Lafrerre, 2001). They are:

1. Social presence: sharing personal information, complimenting others, expressing appreciation;
2. Articulating individual perspectives: stating personal opinions, summarizing/reporting on content;

3. Accommodating others' perspectives: challenging others' statements;
4. Co-constructing meaning: seeking clarification / elaboration, responding to questions;
5. Building shared goals and purposes: proposing a shared goal, working toward a shared goal;
6. Producing shared artefacts: producing a document or other artefact collaboratively.

In a series of empirical studies, Murphy has investigated the validity of this model of online collaboration and the relative presence of each stage.

Outcomes

Unlike Holmberg (1983), Moore (1973), Garrison et al. (2000), and Laurillard (1993), Murphy does not present student interaction in computer conferencing as an intermediate step toward a set of general educational goals (e.g., achievement, study pleasure, content reproduction, critical thinking). The outcome she looks for in her studies is simply students engaging collaboratively in each of the six stages of problem identification and resolution. Like many studies of educational discussion, the gaze is directed toward process rather than product. These include developing shared goals and producing shared artefacts.

Conceptual framework

Murphy's model is informed by social constructivist theories. This conception of learning is premised on the assumption that individuals actively construct their knowledge by fitting existing perceptions, interpretations and understanding with knowledge gleaned through a process of collaborating, sharing and negotiating interpretations, experience and understanding with others. The aim of learning, Murphy explains, is thus to support the collaborative construction of knowledge through social negotiation (Murphy, 2003; 2000).

The overarching purpose of the collaborative problem-based activity is to allow students to interpret course themes, to participate actively in knowledge construction, and to create personal meaning. Murphy (2004) argues that the best learning environments allow groups of individuals to make their own meaning for what they experience rather than requiring them to reproduce the teacher's interpretation of that experience or content. Like Garrison et al. (2001; 2000), Evans and Nation (1989), and Gunawardena et al. (1997), Murphy sees the strength of computer conferencing as a forum in which students can debate, wrestle, and argue with each other over individual interpretations. However, she is aware of the virtual absence of these processes in most instances of conferencing. That is why she introduces collaborative problem solving as an essential activity for computer conferencing. Where others assumed that any type of interaction in an asynchronous, textual environment would automatically be valuable, Murphy argues that small group, collaborative problem solving activities compel students to contend with each other's opinions and interpretations. In this context, the medium achieves some of the potential that Jonassen, Davidson, Collins, Campbell, and Haang (1995) attribute to it:

> The power of computer conferencing as a constructivist learning tool lies in the capabilities to support conversation and collaboration. Groups work together to solve problems, argue their interpretations, and negotiate

> meaning. While conferencing, learners are engaged in discussion and interaction with peers and experts in a process of social negotiation. Knowledge construction occurs when students explore issues, take positions, discuss those positions in an argumentative format, and reflect on and re-evaluate their positions. As a result of contact with new or different perspectives, these activities may contribute to a higher level of learning through cognitive restructuring or conflict resolution, leading to new ways of understanding material. (p. 12)

This interpretation of educational CMC has led Jonassen, like Murphy, to focus on problem-based learning as the most suitable learning activity for computer conferencing.

Empirical Evidence

A strength of Murphy's model is the sustained program of empirical study that informs her conceptual framework and her claims about computer conferencing. In a series of projects, she has examined the validity of her conceptualization of the problem formation / problem resolution process, the validity of the instrument used to asses students' engagement in the six-stage process, and the students' experience of the learning activity (Murphy, 2004a; 2004b; 2004c; Murphy, 2004d; Murphy, 2003; Murphy, 2002; Murphy, 2000; Murphy & Coleman, 2003; Murphy & Lafrerre; 2001).

The results of Murphy's empirical investigations support the findings of Garrison et al. (2001), Gunawardena et al. (1997), Kanuka and Anderson (1998), and others who have looked for the social construction of knowledge in computer conferencing. Murphy summarizes these results:

> Students engage primarily in processes related to *social presence* and *articulating individual perspectives* and do not reach a stage of sharing goals and producing shared artefacts. Few messages show evidence of collaborative processes such as *accommodating others' perspectives, reflecting others' perspectives*, or *co-constructing shared perspectives and meanings*. Still fewer messages show any attempt to *build shared goals and purposes*, and no messages show evidence of *producing shared artefacts.* (p. 427-428)

Empirical observations of computer conferencing consistently find a predominance of monologues, relational communication, or superficial interaction and a meagre amount of collaboration and knowledge co-construction. Murphy hypothesized that a learning activity that compels students to interact in meaningful ways—collaborative problem solving—would change this; however, she has found little evidence to support this hypothesis so far.

The preceding models represent important developments in the conceptualization of the role of computer conferencing in post-secondary distance education. My review has not been exhaustive. I have excluded some notable efforts (e.g., Fahy, 2001; Henri, 1992; Zhou, 1996) that have been reviewed extensively in the literature and whose principles have been incorporated into the models I did review. In 1989, Mason called upon distance educators to develop a conceptual and empirical rationale to guide the use of computer conferencing, and since that time there has been a proliferation of models. One criticism of this body of research, in fact, has been the centrifugal generation of models rather than a centripetal merging of resources (Howell-Richardson & Mellar, 1996; Newman, Webb, & Cochrane, 1995; Rourke & Anderson, 2000). In selecting the seven models that I did review, I tried to represent how the role of interaction in distance education has been constructed before computer conferencing was available and once its use had become widespread. Nipper (1989) refers to these periods as the first, second, and third generations of distance education. I also wanted to represent what I see as two distinct perspectives on the role of computer conferencing in post-secondary distance education. In the next section, I describe these perspectives.

Social and cognitive constructivist perspectives of computer conferencing

There are several criteria upon which the seven models can be organized. One way is to consider the conversational partners. Holmberg (1983) and Laurillard (1993) focus on student-to-instructor interaction. Evans and Nation (1989), Gunawardena et al. (1997), and Murphy (2002) focus on peer-to-peer interaction. Moore (1983) and Garrison et al. (2000) present a middle ground in which peer-to-peer interaction is guided by a teacher.

Understanding the rationale behind these different configurations of conversational partners gives rise to another way of organizing the models. The identification of appropriate conversational partners reflects an underlying pedagogical stance. When the instructor or the text is regarded as the appropriate conversational partner, at work is what Hannifin (1995) calls *content-oriented objectivism* or what Murphy (2002) and Gunawardena et al. (1997) call *teacher-centred instructivism*. This understanding, best exemplified by Laurillard (1993), is that instruction is successful when students form an accurate representation of the course content. The course content, in turn, is understood to be an accurate representation of reality. With Moore, this attitude is apparent in his *systems view* of distance education (Moore & Kearsley, 2004) in which course content is amassed and organized by a team of subject matter experts. With Holmberg (1995), it is apparent in the *didactic* quality of his *guided didactic conversation*. To a lesser degree, this process is apparent in Garrison et al.'s (2000) writing in their identification of *direct instruction* as one of three essential components of teaching and learning via computer conferencing. Though Holmberg (1983), Moore (1983), Garrison et al., and Laurillard identify several roles for interaction in distance education, there is a strong sense that *conversation*, *dialogue*, and *critical discourse* are activities through which students develop accurate representations of their subject.

In the other models that I reviewed, the instructor maintains a role, but the role is not didactic. Instead, the role is that of a discussion facilitator or moderator. Rather than instructing students or guiding them to correct interpretations of texts, their job is to establish a welcoming environment, encourage participation, and deflect interaction away from themselves toward other students. Thus, the appropriate conversational partners in these models are the students. Gunawardena et al. (1997), Evans and Nation (1989), and Murphy (2004a), for instance, see a conference as successful when students understand that the topics they are studying are constructions offered from a particular perspective. They should realize that some of these constructions have currency in particular communities, and that some are more persuasive and sustainable in discussion than others.

The first set of models reflects a *cognitive constructivist* interpretation of interaction. The second represent forms of *social constructivism*. McIsaac, Blocher, Mahesh, and Vrasidas' (1998) interpretation of constructivism and its embodiment in education is a cognitive constructivist one:

> A constructivist approach to learning emphasizes that learning is an active and evolving process. Learners are constantly engaged in integrating new information into existing knowledge structures. Through the ongoing interaction between teacher and student, development of meaningful, valid, and increasingly complex knowledge structures are encouraged. This demands two-way communication where students attempt to explain their interpretation and listen to others' understanding. (p. 129)

The principle move that sets cognitive constructivism apart from earlier perspectives of teaching and learning is the re-envisioning of the learner as an active interpreter of information rather than a passive recipient. Cognitive constructivists, such as Piaget (1977), direct much of their attention to the individual and the manner in which he or she processes information, develops knowledge structures, and deploys effective learning strategies. Interaction with others is recognized as a valuable, but not essential, learning activity.

For social constructivists, interaction with others is paramount. Pena-Shaff and Nicholls' interpretation of constructivism and its expression in teaching and learning is a social constructivist one:

> Learning is more effective when students are able to discuss their ideas, experiences, and perceptions with their peers. Dialogue serves as an instrument for thinking because in the process of explaining, articulating,

> reflecting, and negotiating we engage in a meaning making or knowledge construction process. (p. 245)

Social constructivism moves further away from instructivist theories of teaching and learning than cognitive constructivism. Its proponents, such as Vygotsky (1978), direct much of their attention to the role of social, interactive processes in the interpretation and generation of meaning.

In this section, I have reviewed prominent conceptualizations of the role of interaction in distance education. Some of these transcend particular media and communication technologies; others deal specifically with computer conferencing. I have analyzed them through a set of criteria that includes the types of interaction they prescribe, the outcomes with which these are associated, the theoretical connection between the activities and outcomes, and the empirical investigations of their utility.

I have cast a wide net in this literature review in attempting to understand how participants experience and understand learning through online discussion. A variety of suppositions arose, none of which was definitive. For me, none of the conjectures presented in the literature review seem completely satisfactory. Alternative ways of looking at the phenomenon exist that are not to be found in the existing literature. A productive method for continuing this investigation is described in the subsequent chapter.

Chapter 3: Research Design

In this chapter, I describe the method I used to explore the question, how do participants experience and understand online discussion? I begin with an overview of the philosophical perspective that shapes my study and then provide a detailed description of my research design. After discussing the procedures involved in data collection and analysis, I conclude with a description of the measures that I took to ensure my report is trustworthy and credible.

Research Perspective

I conceptualize my study from within the naturalistic paradigm. Frey (1994) presents six assumptions of this paradigm: 1) realities are multiple, constructed, and holistic; 2) knower and known are interactive and inseparable; 3) only time- and context-bound working hypotheses are possible; 4) all entities are in a state of mutual simultaneous shaping so that it is impossible to distinguish causes from effects; 5) inquiry is inherently value bound, and 6) the individual self is often divided and fragmented. Since the mid 1980s, these assumptions have come to provide an important basis for research on communication technologies such as computer conferencing (e.g., Frey, 1994; Orlikowski, 1992; Orlikowski & Barley, 2002; Orlikowski & Summer, 1998; Poole & DeSanctis, 2004; Weick, 1993, 1990a, 1990b).

Lincoln and Guba's (1989, 1985) presentation of this perspective—its ontology, epistemology, and methodology—has been influential in educational research. Ontological questions are questions about the nature of existence. Naturalistic researchers argue that the world is a construction that arises from the interplay between the objects out there and a sentient, intentional, situated being. A message in a computer conference, for instance, has some attributes that could be catalogued by a detached observer, but it does not have a meaning that is independent of the student who composes it and the other students who read it—or the researcher who analyzes it.

Epistemological questions seek answers to the nature of knowledge. For social constructivists, knowledge is a consensus among a community of knowledgeable peers. The truth of assertions is not evaluated based on their correspondence to the pronouncements of authorities (e.g., emperors, popes) or objective reality. As Lincoln and Guba (1989) have phrased it: "Truth is a matter of consensus among informed and sophisticated constructors" (p. 44).

In the complex, contingent, everyday practice of research, these assumptions can manifest themselves in many ways. Some researchers attempt to engage in an on-going dialogue with their participants and to produce reports that recreate this dialogue. The hope is that readers of the reports witness the production and reproduction of meaning among the participants and the researcher. Conrad (2002) exemplified this approach in her doctoral dissertation in which she studied community, interpersonal communication, and engagement among adult learners in online discussions.

In other contexts, the interaction between the participants and the researcher is manifested most strongly at a structural level. Researchers approach the context with an open-minded orientation toward a general issue, and they ask the participants to identify and define what is happening, who the actors are, and what their definition of the situation is. This is the approach explicated by Spradley (1979), the ethnographer to whom Lincoln and Guba refer students of the naturalistic approach to research. Eastmond (1995) exemplified this approach in his doctoral dissertation in which he studied the use of online discussion in adult, distance education.

My study unfolded more like Eastmond's (1995) than Conrad's (2002). I had planned to engage in a thoroughly dialogical process and generate a report that recreated that dialogue. However, the relationship I had with the participants was more like the one Eastmond had with his participants than Conrad's (2002) relationship with hers (personal communication, Conrad, January 15, 2005). Conrad worked in the program from which she selected her participants, she met with many of them in-person on multiple occasions (many lived close by), and her relationship with the participants commenced before her study through their connection in the program. Conversely, before my study began, I had no connection to the students, the instructor, or anyone involved in the program from which I eventually selected a course and a small group of students to study. All but one of my participants lived in different cities (or different provinces) than I did. Moreover, it was difficult to insist of my adult student—with families and careers who were enrolled in graduate programs— that they make themselves available to me for an on-going conversation.

Nonetheless, in my study there were several data collection and analysis processes that embody the tenets of social constructivist. As I explained, I allowed the participants to identify and define what was happening, who the actors were, and what their definition of the situation was. An example from my study will illustrate this process. In the middle of my study, I sensed a difference in the character of interaction in two different conferences. One conference was a forum for group work, and I noticed that the messages were short and arrived in quick succession. The other conference was a forum for open-ended discussion, and the messages seemed to be longer and separated by greater amounts of time. I was tempted to see these as distinct forms of interaction, respectively, conversation and discourse, and began to consider the implications for learning. Working through this analysis was laborious as I counted the number of words in messages, logged the number of minutes that separated them, and calculated comparisons. When I approached the students with this interpretation, however, they responded that the features I was objectifying and counting were either meaningless to them or had different meanings for them. One of the students, for instance, said:

> I don't think the length of time between posts has any meaning for me—unless it's my turn to moderate, and then I'm wondering if anyone is going to respond, and hoping they respond early so I have time to post back to everyone and it doesn't get too hectic at the end of the week. As for the duration - if the post is fairly short it is easier to get a handle on what the person wants to say. Longer posts I have to print out to really understand. And I don't think people really take time to fully understand what others are saying. I think we tend to just go for the gist. The other things I take into consideration in a post are: have I any knowledge on this topic? Am I interested in what he/she is saying? (Ruth, Email correspondence, March 30, 2004)

After receiving similar responses from the other students I interviewed, I aborted the analysis I had begun and refocused my observations and interview questions on the issues they introduced. This approach to naturalistic research, advocated by Lincoln and Guba (1985), detailed by Spradley (1979), and manifested in the domain of distance education by Eastmond (1996), and in the domain of communication studies by Fulk (1993) and Orlikowski (1992), allowed me to study computer conferencing from a social constructivist perspective. The data collection process was not as dialogical as I planned, but I feel I was able to be responsive to the needs of this volunteer group of adult students while composing a report that assumes realities are multiple, holistic, and contextual. In the final chapter of this document, I revisit some of these concerns.

Case Study

The naturalistic paradigm takes its name from the location of the research—the field or setting where the phenomena occur naturally. Sometimes, this enterprise is referred to generically as *case study*.

The case study is a fundamental form of qualitative research. Gall, Borg, and Gall (1996) use it synonymously with the term *qualitative research* in their popular text on educational research, and Lincoln and Guba (1985) assert that it is the ideal format for reporting naturalistic inquiries. Its processes and its products can exemplify the tenets of qualitative, naturalistic, constructivist research.

Merriam (1998) has championed the use of qualitative case study research in adult education. She defines a *case study* as "an intensive, holistic, description of a single instance, phenomenon, or social unit" (p. 21). Merriam adds that the descriptions may also be accompanied by interpretation or evaluation, thus yielding three different types of qualitative case study. The current study included elements of all three. Merriam describes the benefits of this type of study:

> Rather than just describing what was observed or what students report in interviews, the investigator might take all the data and develop a typology, a continuum, or categories that conceptualize different aspects of the phenomenon. The level of abstraction and conceptualization in interpretive case studies may range from suggesting relationships among variables to constructing theory. The model of analysis is inductive. These types of case studies are distinguished from straightforward descriptive studies by their complexity, depth, and theoretical orientation. (p. 28)

The issues that arose in my study could not be satisfied by a wholly descriptive presentation; they warranted interpretive analysis.

Stake (2000, 1995, 1994, 1981, 1978) is one of the main proponents of case study design, particularly as it pertains to educational issues. He describes it as "the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances" (p. xi). Stake discusses three types of case study—

intrinsic, instrumental, and *collective*. *Intrinsic* case studies project the inherent value of the particular case that is studied. *Instrumental* cases are selected primarily for their ability to illuminate some issue, and secondly the case itself. *Collective* cases are collections of intrinsic case studies undertaken to allow cross case comparisons.

Stake (1995) acknowledges that in the field, there is much overlap in purpose and procedure of the three types. With this caveat in mind, I initially proposed an instrumental case study. My main interest was with learning through online discussion, and I thought that my case would be generally reflective of this process. Once I began talking to the participants and reading along with their conference, I realized that what was happening, on balance, was more exceptional than representative. As I proceeded further into my study, the issue that stood out for me was the uniqueness of each participant's experience. Rather than fighting to amalgamate their experiences into one generic account, I found myself collecting and analyzing data in a manner that emphasized my case's and the participants' exceptionality. In the end, my report is more like a collection of five unique case studies than an instrumental case study.

Selecting the Case

In accordance with the purpose of this study, I studied a computer conference that was a central component in a graduate-level course. The course was offered entirely at a distance, and it was *paced,* that is, the students were all working on the same timeline. I searched earnestly for a course that I thought would offer the best possibility to observe valuable activity in an online discussion.

I selected a graduate-level humanities course because, in my experience, discussion and dialogue play an important pedagogical role in humanities education. Further, I thought that graduate students might hold ideas about the nature of truth and knowledge that are congenial to the role of discussion in their learning (see also Baxter-Magolda, 1996; King & Kitchener, 1994; Meyer, 2003).

I also believed the students in this particular distance education program might be less instrumental in their studies than students in similar programs. The institution that offered the program I studied also offered a similar program in a related field and students are often confronted with a decision about which of the two programs to enrol in. After teaching in the other program and speaking to students in both programs, it is my perception that the other program (the one I did not study) can attract students who are primarily interested in obtaining a graduate certificate so they can advance in their careers.

Finally, I selected a course in the humanities because, as I found in a previous review of the literature, approximately 75% of the case studies of computer conferencing are conducted on courses offered by Faculties of Education (Rourke & Conrad, 2004).

Twelve students enrolled in the section of the graduate-level humanities course I studied, and two withdrew within the first month. Throughout the study, I worked with five of the remaining students and their instructor. The course was 15 weeks in duration.

Data Collection

My data collection techniques were observation and interview, the two staples of knowledge construction in qualitative case studies. These techniques play off of each other. Through interviews, I accessed the participants' constructions of the phenomena under investigation. Through observation, I constructed my own. The data from interviews focused observation while observations corroborated interview data. These procedures are described in detail below.

Observation

My observations focused on the computer conference. In the vernacular of cyberspace, I was a lurker—I read but did not contribute to the proceedings. I read the participants' contributions to the conference at least three times per week from beginning to end. I also saved transcripts of weekly conferences for subsequent readings and analysis.

The type of questions I brought to the observation included:

- How can I characterize the participants' messages? For instance, do they appear to be informal arguments, consisting mainly of claims supported by grounds (Toulmin, 1958)? Are they more like narrative discourse with students exchanging anecdotes of their experiences (Potter, 2002)? Is social chat, a process in which students share information about their families or their extracurricular activities, a better term to describe the individual messages?
- What types of educational interaction are occurring? Do they resemble what Dillon (1996) refers to as *discussion*? Or, are they more like monologue than dialogue? Is there evidence of the practical inquiry process prescribed by Garrison et al. (2000) or the knowledge co-construction process prescribed by Gunawardena et al. (1997)? Is the interaction primarily between students or between the students and the instructor? Is there an identifiable difference between the types of

messages that are directed toward the instructor and those directed toward peers?

- What is the relationship between the participants' action in the conference corroborate their characterizations of their participation?

One step in understanding how participants experience and understand the online discussion process is to describe their activity in the computer conference. That was the role of observation.

Interview

Observation goes hand in hand with interviewing. I interviewed the instructor at the outset of the project. With an open-ended interview, I tried to ascertain how he had constructed the role of computer conferencing in this course and, in general, the role of dialogue and interaction in post-secondary distance education. I wondered whether he would speak of computer conferencing as a communication technology or an instructional methodology. I wondered if the instructor would use classroom or face-to-face analogues in reference to the computer conference. Subsequent questions depended on how the instructor conceptualized the phenomenon. Some were directed at discerning the instructional design ideas that he had for the conference, and assessments of how it had worked in the past, how it was working now, and attributions for these assessments.

Unfortunately, contact with the instructor was intermittent throughout the study. Because he was teaching multiple sections of the cours and performing several duties as an administrator in the program, we were not able to meet as often as we had agreed at the outset of the study. After two, one-hour interviews, we exchanged brief emails for the balance of the course.

Also at the outset, I conducted interviews with seven students who offered to participate in each data collection process. Two of these students withdrew from the course during the first month, and I conducted two more interviews with the remaining five students. Each of the three interviews lasted approximately 60 to 90-minutes, and they were conducted via telephone. I recorded and transcribed the interviews. There was an increasing amount of focus and structure from the first to the third set of interviews.

The first set of interviews occurred during the second week of February at which time the participants were completing their first month in the course. Generally, these interviews had a *grand tour* format (Spradley, 1979), in which I asked the students open-ended questions such as; "take me through a typical day." The purpose of this type of interview is to allow the participants rather than the interviewer to identify, in their own language, the salient features of the environment and the relationships between these features. During this interview, I also collected biographical information about the participants that related to their presence in the course.

Originally, I had hoped to conduct one set of interviews during the first or second week of the course; however, I was unable to secure approval from my institution's ethics review board until the middle of January. By that time, I had already received approval from the site institution's ethics board, but it took an addition two-weeks to receive approval from all of the students for me to observe their conferencing activity.

The second set of interviews occurred approximately one-month after the first. At this point, the students were in the third month of their four-month course, and I asked them questions about events that I was observing in the conference. I asked them to talk about specific messages that they and others had posted, to offer their explanations of what they were doing, and their interpretations of what others were doing.

The third set of interviews occurred during the last month of the course. The purpose of these primarily was to have the students comment on the interpretations that I and the other participants were forming of happenings in the conference. I also asked them to confirm the information that they had provided in earlier interviews.

During the weeks that separated the interviews, I emailed each of the participants several times. These correspondences served three purposes, typically. First, I used email to engage in the formal member check process that is required after interviews have been transcribed and interpreted. Second, there were several occasions on which I wanted to ask about a specific exchange that had occurred in a conference while the incident was fresh in our minds. Third, I used email to share my developing constructions of what was happening in the conference with the participants. In total, I exchanged 97 emails with the five students and the instructor from the time the first interview was conducted to the time the course ended.

Interviews conducted via telephone were useful in three regards. They contributed to our rapport, they elicited extemporaneous responses, and the occasional sprawling response took us into issues that I might not have inquired about. Email allowed the students to consider my questions and to prepare thoughtful responses, and it enabled me to ask questions and receive responses as issues arose rather than waiting for several weeks before our next scheduled interview.

Data Analysis

Stake (2000, 1995, 1994, 1981, 1978) offers little of a prescriptive nature for the analysis of case study data. He offers a few ambiguous remarks about *categorical aggregation* and *direct interpretation*, a poem, the word 'mystic' and he is done. His point, I gather, is that qualitative analysis, particularly in the context of case studies, is unique, highly personalized, and creative. It is not the algorithmic process of quantitative analysis. This was my experience.

Cresswell (1997) has some heuristics for the beginner. To begin data analysis, he advises, researchers should create a system for storing data in an organized manner. The mass of data produced in a qualitative study makes this an imperative. On my computer I have dozens of folders that contain hundreds of files. Some are dedicated to each of the participants I studied in-depth and include their interviews (both telephone and email), files that contain all of their posts, provisional analyses of their activity in the conference, and the vignettes that I prepared for each of them. I have 50 separate folders that contain the transcripts of each of the weekly conferences, including the introductory conference, the working group conferences, the plenary conferences, and the student led conferences. Other folders contain various analyses, some of which went nowhere, others of which figure prominently in my final report.

Once I conducted an interview, my first analytical step was to listen to it a few times and prepare a transcript. During this phase, I made marginal notes and did some provisional coding. Quickly, my analyses became microscopic in a process that grounded theorists call *line-by-line analysis* (Corbin & Strauss, 1990). In this mode, I examined the interview transcript or the recording sentence-by-sentence and phrase-by-phrase allowing salient phenomena or concepts to emerge.

Many of the techniques popularized by Glaser, Strauss, and Corbin (Glaser & Strauss, 1967; Strauss & Corbin, 1998) in their discussions of grounded theory were useful in my data analysis. Aside from the line-by-line analysis, which includes open and axial coding, techniques such as identifying concepts, making continuous comparisons, writing memos, and developing conceptual models were parts of my study. Other procedures that I employed included writing reflective notes, preparing field notes in which I summarized what had occurred in during a particular conference, summarizing the field notes and obtaining feedback from participants on the initial summaries. In the early stages of the project, I attended to the language used by the participants. In the latter stages, I sorted data into categories and created visual displays of my analysis.

In qualitative case studies, some of the analytic and interpretive chores are shared with the reader. Readers are encouraged to construct their own meaning from the description provided through a process that Stake (1995) calls *naturalistic generalization*, "the conclusions arrived at through vicarious experience so well constructed that the person feels as if it happened to them" (p. 85). Lincoln and Guba (1985) also push researchers to compose reports that are vivid and redolent and give readers the sense that they have visited the situation themselves. I facilitated this process by constructing thick descriptions of the conference activity using evocative language.

Occasionally, there is a danger that this language evokes an unflattering impression of the participants. Stake's (1996) case study of the Harper School includes a depiction of the institution's school council that could be misconstrued by readers:

> So far, the Harper School Council had made little contribution to the governance of the school. Elected members were not experienced in management. A few had had experience in PTA but not in running a school. One of the first orders of business for the school council was the required evaluation of the principal. It was apparent that council members had little insight into the task. (p. 148)

What this depiction represents is not an attack on a group of community volunteers by an experienced evaluator. This would not be consistent with Lincoln and Guba's suggestion that naturalistic researchers act as champions of the people of whom they write. Rather, Stake is presenting his impressions of a situation that will help readers understand his evaluation of the Harper School and help readers form their own evaluations. Hopefully, my struggle to balance my respect for the participants and my need to reveal my impression of events with readers is successful. I hope that readers, especially those who have participated in computer conferences, will find some resonance in my descriptions.

Limitations

Along with the advantages of the case study strategy, there are disadvantages. These are of several types. The first may be dismissed as misunderstandings of the nature of qualitative research. Cases are not necessarily representative, interpretations are not generalizable, explanations are relative, and my subjectivity pervades the report. To these charges, Stake responds: "All of the criticisms of case studies are true" (p. 43).

The local and relative nature of my data collection and analysis procedures will not yield any insights into similar phenomena in international contexts. This is unfortunate. As Campbell (personal communication, August 12, 2005) and Williams, Watkins, Daley, Courtney, Davis, and Dymock (2001) note, cross-cultural research on this issue could enhance our understanding of the North American context and might provide useful suggestions to those whose use of this technology transcends nations and cultures.

Three other criticisms of case study research are more pointed. First, case studies are highly labour intensive. Lincoln and Guba (1985) provide words of warning:

> Many adjectives can be found to describe the task of writing of a case study report: frustrating, grinding, taxing, convoluted. The person who can manage all of the tasks in good humour while avoiding both schizophrenia and cardiac arrest cannot be found easily. (p. 356)

My experience supports this characterization. The course that I studied had an unusually busy conferencing component. I anticipated having to analyze 13 conferences—one for each week of the course. In my case, however, there were 67 conferences. The course was 15-weeks in duration, not 13, and the conferences were not of the conventional variety in which one conference supports discussion for the entire class for a week. In the first six weeks of this course, students were divided into four groups, each of which had their own working space conference and their own plenary conference. From weeks seven to fifteen, four students led separate conferences each week in which everyone was encouraged to participate. Additionally, there were introductory conferences, evaluative conferences, and more. Observing and analyzing all 67 conferences expended all of the resources that were available for this research project.

Securing the resources that are required for a trustworthy and credible report is a challenge faced in many qualitative case studies. One of the specific challenges for my project was to develop an in-depth understanding of the members' perspectives and the accompanying life-like descriptions while being physically separated from them and their settings. The qualitative case study method employs many of the data collection and analysis procedures of ethnography. Processes such as developing rapport and trust with informants, understanding the subtleties of the situation, and identifying the local and ephemeral factors that are influencing members' actions is not easy, and it has traditionally required researchers to immerse themselves in the situations that they are investigating. However, I found, as Hine (2000) did, that interacting with and observing informants through Internet communication tools was valid because that is how the participants interacted with and observed each other. In the next section, I describe more fully the measures I took in response to this challenge.

Trustworthiness

A critical element that distinguishes good case reports from others is the researcher's care in establishing trustworthiness (Lincoln & Guba, 1985). Reading reports such as Oliver and Hannifin's (2001), I was convinced that, even though their conclusions are based on a sample of one and the primary measurement instrument is the researcher, their results are credible, transferable, dependable, and confirmable.

Under the rubric of credibility, Lincoln and Guba (1985) address three potential problems; the first is reminiscent of Heisenberg's principle: The researcher's presence at the site disrupts the normal flow of activity. The fact that I was not only present, but interviewing the participants, asking them to reflect on their activity and to help me understand what was happening on a theoretical level changed the situation. What I studied and report on, therefore, was not simply a graduate-level computer conference, but one in which a researcher was present, active, and influential.

A second issue is the time it takes to understand a culture. I had the advantage of sharing a distant membership with the participants I studied. Like the students, I was a graduate student who had taken courses online. Like their instructor, I was teaching a master's level course online while I was collecting my data. There were many elements of the participants' culture that I did not share, but the areas in which our experiences overlapped were relevant to this study.

The third issue relating to credibility is building trust, which is developed through prolonged engagement (Lincoln & Guba, 1985). I studied the case for its entire 15-week lifespan, and in doing so I argue that I spent as much time with the conference as the students did, perhaps more. Corollary to prolonged engagement is persistent observation. I read the participants' contributions to the online discussion at least three times per week for the duration of the course. This provided me with sufficient opportunity to identify salient and relevant issues in the case.

Lincoln and Guba (1989) prescribe two additional processes for developing credibility, *peer debriefing* and *progressive subjectivity*. The purpose of *peer debriefing* was to use informed peers as sounding boards for my developing interpretations. Members of my supervisory committee played a central role in this process, as did the extensive community of colleagues with whom I have already established this type of relationship. I have an email folder teeming with over a hundred emails that I received from people who have conducted dissertations on similar topics, prominent figures in distance education (some of whose work is prominent in my report), and authors who have published articles on topics similar to mine. Several of these people were gracious enough to talk with me at length over the phone.

Erickson (1986) criticizes qualitative reports that lack adequate disconfirming evidence for the empirical assertions they offer. One precaution I took against confirmation bias was journaling. I recorded my expectations of what I found at the site, what I was finding, and periodically checked how my projections matured and evolved. It was evident that my understanding was informed by my observations and interviews with the participants. The example I provided earlier in which the students disputed my construction of the length and timing of messages in different conferences is one instance. I feel confident that I conducted research in which knowledge was constructed through negotiations between the participants and me.

The second quality that Lincoln and Guba (1989) associate with trustworthiness is *transferability*. The idea of transferability is that consumers of my report should be able to determine whether my findings are meaningful in their settings. To accomplish this, I prepared in-depth descriptions of the participants' experiences. These, I think, allow readers to be co-analysts of the data and to develop their own generalizations.

The final two elements of trustworthiness are *dependability* and *confirmability*. These criteria are parallel to the positivistic criteria of reliability and objectivity, but conceptualized in accordance with the social constructivist understanding of reality and knowledge. Both are achieved through consistent and detailed documentation in a process referred to as dependability and confirmability audits. The purpose of the former is to allow, at least in theory, an external expert to judge whether the information presented in a report is an appropriate representation of what happened. The latter would allow the same evaluator to determine whether the empirical assertions presented in the report are supported by data and are internally coherent. I feel confident inviting interested parties to compare my field notes, my journal, my stored transcripts, and my provisional analyses with my final report.

Protection of Human Subjects

Now that I have described the purpose of the research, outlined the method of inquiry, sketched the role that participants played, and described measures to ensure trustworthiness, it is possible to discuss the measures I took to protect my participants. The section contains a brief overview of issues concerning the ethical conduct of the inquiry.

Once the study was approved by the Faculty of Education's ethics board at the University of Alberta, it was presented to the ethical review board of the institution where the research was conducted. Once approved, I met with the course instructor in order to introduce the study and seek his cooperation and support.

With the instructor's assistance, I prepared a script to introduce the study to the students. The script contained a brief overview of the project and an indication of what would be requested of the participants. I adhered to the following conditions throughout the study:

- The participants' decision to participate was entirely voluntary, and I would have honoured their right to opt out without penalty, harm or loss of promised benefit at any time. Any data that had been collected prior to the decision to terminate would have been destroyed;
- There were no exceptions to the general requirements of full disclosure;
- No one except my supervisory committee and me had access to the interview transcripts or the observational records. Data were kept in a secure place in my home for the duration of the study and will be for a

period of five years after the study has concluded. After that, the data will be destroyed;

- Any information that the participants shared with me remains confidential and anonymous. No information was shared with other participants, including the instructor and other students, in such a way that the source of the information was identifiable. The data are being used in one study, and versions of this report may be submitted for publication in academic journals and at conferences. Prior to publication in any form, all identifying information will be removed from the reports;
- The interview recordings, transcriptions of the recordings, and transcripts of the computer conference are stored securely in my home office for the duration of the study and will be for an addition period of five years.

In consultation with both ethics boards, and based on the advice of the instructor, the request for participation (including the project overview and informed consent form) was sent to the students by the secretary of the program that I studied. All of the students in the class consented to my observation of their conferences. All but two students consented additionally to be interviewed throughout the course.

No threat or harm to any of the participants occurred. No research assistants were involved in the research, and I performed all transcriptions.

In this section I discussed the issues that pertained to the ethical treatment of human subjects. During the study, the participants, including the instructor and the students expressed no concerns about any of these issues. One of my concerns was the time and energy that they participants were asked to devote to the project.

Qualitative data gathering techniques, including lengthy unstructured interviews, continuous member checking, and the particularly intensive nature of case study research place more demands upon participants than, say, survey research. However, the participants were usually enthusiastic about their participation, and when they were busy, they were quick to let me know.

Chapter 4: Findings

The Program

The course I studied is one in a master's program offered by a Western Canadian University (hereafter referred to psuedononymously as "Western Canadian University, WCU). Completion of the program is contingent upon students finishing ten courses--two required, eight elective--and two projects. The emphasis on elective courses reflects one of the key values of the program—giving students the authority to design their own curriculum and to integrate their diverse knowledge and experiences. None of the courses require students to attend the campus. Each is delivered at a distance in either a *grouped* or *independent* mode. Independent study reflects a traditional distance education delivery model in which students receive a package of readings and assignments, which they work on independently over a six-month period. In grouped study, a set of students proceeds through a course on the same timeline, under the direction of an instructor, and through the support of communications technologies.

The Course

The course I studied is a grouped course and the first of two required courses in the program. In the course, students engage in a discussion of the ways the humanities and social sciences have accounted for the world from the Middle Ages to the present. The general goal is for students to think about, write about, and discuss the theories that underlie the subsequent courses in the program.

Toward these ends, a set of readings and associated activities has been developed for this 15-week course. The readings are the centre of six learning activities. The main learning activity is the continuous online conference into which each of these other activities are integrated. The conference was the focus of my study, and I will describe it in detail later. Here, I will only mention it in its relationship to the other activities. The first of these is the preparation of a 1,000-word essay on an event portrayed in a history text. The students do this twice, first collaboratively in groups of three or four via computer conferencing. After this practice run, they prepare an individual analysis. For their second and third assignments, they prepare two 500-word papers in reaction to two of the remaining readings. These papers become the impetus to their fourth and fifth activities—hosting an online, weeklong conference structured around their papers. Their final task is to write a 3,000-word paper on a course-related topic.

The Students

The main sections of this report present rich descriptions of five of the students. It is useful, however, to begin with a general description of the class, asking what brought them to this course and where they had come from.

These students are seeking two things from a Master's program, intellectual fulfillment and credentials for career advancement. Because they are adult students with families and careers, they chose a distance program, which allows them to obtain their intellectual and instrumental goals without having to quit, relocate, or attend classes. The appeal of integrated studies is its diversity and flexibility. As a minimum, all of the students have an undergraduate degree though most possess more than this.

Many have taken courses at a distance before, and a few have participated in computer conferencing.

All of the students volunteered to participate in the study, but only seven agreed to be interviewed several times. Of these, two withdrew from the course within the first three weeks. My study focuses on the remaining five students.

The Computer Conference

At the centre of the course is a computer conference. It is here that the participants meet each other when the course begins and bid each other farewell when the course ends. Every activity in which they engage includes a conferencing component; readings are discussed, essays are shared, and assignments are researched in the conference. By the end of the 15-weeks, they have participated in 67 separate conferences.

Participation in the conferences accounts for 20% of the students' grade. Assessment was binary: if the students meet this requirement, they are awarded the full 20%; if they do not, they receive no marks. The instructor does not provide a rubric to guide the students' participation, only the directive to participate with a specific frequency.

The administrators of the program selected an open-source conferencing system. It is a free system that is being developed at their university. The cost, the open source philosophy, and the ability to influence its development are cited as appealing factors.

Activity within the conference is organized around four types of exercises which typically have a one-week duration. The four types of conferences include 1) introductions and greetings, 2) group work, 3) plenary sessions, and 4) student-moderated conferences.

The course starts with an *introductions and greetings* conference. It begins with a post from the instructor in which he asks the students for a brief biography and models his. Each of the students obliged.

The *working space* conferences are a place for the students, who are assigned to small groups, to coordinate their activities on a set of assignments during the first six weeks. Each group—there were four—has its own space, which the instructor promises not to monitor. His participation in these conferences is limited to setting up the groups and posting the questions each group will field.

Paralleling the *working space* conferences is a set of *plenary conferences* to which the groups post the products of their week's activity. These are public and the intention is that the students will engage in discussions stemming from these products.

From week seven to the end of the course, the students host conferences based on papers they had written. Each student writes two papers and hosts two corollary conferences. The instructor uses this activity to cover the course readings. Because there were not quite enough students to cover all of the readings, the instructor supplemented the students' essays with essays from previous years' students.

In the next section, I provide rich descriptions of each of the five main participants (the names I use are pseudonyms), including a brief biographical sketch, a description of their conferencing activity, and an account of their understanding of learning through online discussion.

The ensuing portraits of the five students read much like Stake's (1996) *intrinsic case studies*; together, they constitute a *collective case study.* This was not my original intent. Originally, I wanted to conduct an *instrumental case study.* I wanted to study a graduate-level course, preferably in the Humanities, in which computer conferencing played a significant role. I assumed that any course I selected would be representative of the issues that arise when this type of technology is deployed in this type of setting. As I spoke with the students, however, the issue that stood out most prominently to me was the uniqueness of each participant's experience. At times it seemed like they were each involved in different computer conferences. The remainder of this chapter, therefore, is structured in a manner that emphasizes the uniqueness of each student's experience. In the following chapter, I explore some of the commonalities in their experiences.

Saul, Jacques, Ruth, Judith, Marshall

Saul

Background

Saul lives close enough to the city to commute daily. He is an instructor in an applied arts program, currently teaching two courses. He also owns a business in the field—imaging and professional photography. His business focuses on the advertising market: "I don't do weddings," says Saul (Saul, First interview). I learn little about his family except that he is married.

Intellectual curiosity first and pragmatic concerns second explain Saul's motives for graduate study. He is careful to distinguish himself from "the many people who just want the paper and the designation" (Saul, Email correspondence, March 20, 2004). However, he recognizes that a Master's degree will be useful in his position, i.e., an instructor in a college that is moving toward degree-granting status.

With a career and a business, he is not keen to relocate; therefore, he researched Master's programs that are offered at a distance. WCU's is prominent among these. Within this university, the program I studied is attractive because of its flexible curriculum. It will allow him to build on his undergraduate degree and explore some of the issues that are emerging in his field:

> Because it's an integrated program, it will allow me to integrate two disciplines. I will continue one stream in adult education, and I will develop the second stream around what I teach. The technology [of my field] has changed since I began teaching. I need to learn more about that. WCU offers very very few courses in that area, but the program director will allow me to take whatever Arts courses that they have to offer, use the projects and independent reading courses to satisfy some needs, and go outside WCU to take more appropriate courses as a visiting student. So I'll have both disciplines and that will keep me and my Dean happy. That's kind of nice. Its almost like we can design our own learning, so the flexibility is good. (Saul, Second interview)

Flexibility is a characteristic that attracts many students to the program.

The program is not Saul's first experience with distance education. He obtained his baccalaureate degree in Adult Education through a continuing education, remote-site model of delivery. Finding himself in a distance education setting again, Saul says that he would prefer a face-to-face program, but that the distance model will do. I do not hear about any previous experiences with computer conferencing, but I do hear about his daily use of computers.

Conference Activity

Saul works on the course from his home office; he works tirelessly. In reference to the conference, for instance, he noted (consistent with my observations), "I have posted a reply to every response to my group's postings. Additionally, I have responded to the majority of the other groups' work as well (Saul, First interview).

The prevailing theme in Saul's experience of the course is the interaction in the conference. This is evident throughout the interviews, beginning with his response to my first question, "Take me through a typical day:"

> The first thing I do is check my email to see what my group members have to say or to address their concerns about a particular assignment that we're working on. Once I've addressed those concerns and expressed some concerns of my own, I'll logon to the conference to look at any updated postings, or responses that others of the cohort or the instructor may have added to our postings. Once that's digested I'll post something of my own. (Saul, First interview)

Saul organized the conference postings into three types—those that have *no value*, those that are *valuable*, and those that are *playing to assessment*:

> The responses have varying degrees of value. Sometimes I'll get a response as simple as "Great paper"—that's at one pole. At the other pole, I'll get a full-page response in which the respondent will

> compliment my message, express agreement with my ideas, and then elaborate on what I've said or give a unique interpretation on the same idea. Other responses are there because they know they're being evaluated. (Saul, First interview)

He pointed to the following response as an example of the *great paper* type:

> Hello Saul,
>
> I just wanted to say that I enjoyed reading your answer. You did a great job of getting to the core of your answer in your own words, all the while supporting you thoughts with the text. It was a clean read, direct and simple. Thanks for that! (Student, Group Two's Week One Conference)

Saul feels that the conference should add something to the course, and vague compliments do not accomplish that:

> Something like "Great post, really enjoyed it" has no value for me. If that was a personal email, I'd send back "thank you very much, really appreciate it," but this is a conference. This is a conference for a master's program. To receive a response like that, there's no added valued for me at all. I just deem that as a waste of time and space. I look and it and say "why do they even bother?' Other times, I read responses that include one or two citations or academic references and clearly that's being posted because they know they're being evaluated. I can read between the lines in some of the postings, and a lot of people are very concerned about assessment. Maybe they're counting

> numbers; maybe they're sitting back thinking, "I've got to say something, [the instructor] might be counting how many times I post a response." (Saul, First interview)

Saul informs me about the type of content that belongs in a graduate-level conference and what belongs elsewhere:

> I've received a couple of personal emails from members of other groups who wish to ask a question about something outside of the conference. It may have been deemed an inappropriate question or comment for the conference. For example, something in one of my responses may have alluded to one of my many experiences traveling throughout the world. Then there was an out-of-conference email precipitated by myself to simply say "Yes, this is where I was, these were my personal experiences, and I thought I would email you directly and keep it out of the conference because I didn't think it was appropriate for the conference." It really has nothing to do with the conference; it has nothing to do with the other members of the group. (Saul, First interview)

According to Saul, students may share personal information, but these exchanges do not belong in the conferences.

When I read Saul's posts, the first thing that stands out for me is their incomprehensibility. This arises through stylistic and logical miscalculations. Stylistic errors include grammatical mistakes, unconventional uses of words or phrases, and sentences that are needlessly cumbersome. In Saul's 57 messages, I find 22 that contain these elements. Typical examples of misuses or unconventional uses of words and phrases include:

> I choice to reflect on the internal circumstances that affected change, both through a critical look at the concrete as well as the abstract concepts of mankind. Cheers! (Saul, Week 6, Jacques' conference)
>
> What we are and what we do are not mutually absolute. (Saul, Week 3, Group one's plenary conference)
>
> When [another student] discussed this during last week's conference, it was in the context of man's inner values and motivators as opposed to a time sensitive analogy. (Saul, Week 11, Ruth's conference)
>
> Is reason the ability to engage logical thinking, which therefore remains interconnected with whoever invoked reason, or an abstract concept only to be postulated? Could one man's reason be another man's irrationality? (Saul, Week 7, Student-moderated conference)

Although these utterances are awkward, the miscues are minor and it is easy to bring some sense to them. In another set, the meaning appears to be hidden in overly complex terms or phrases:

> Stage developments represent the various life markers that we experience as we age and develop. This has an advent of being a

> paradoxical assertion with latent tendencies for an anarchical response. (Saul, Week 3, Group Two's plenary conference)

> What the author has exemplified in this statement is we all search for truth in wherever we apply ourselves. (Saul, Week 12, Marshall's conference)

> Was it faith in belief?" (Saul, Week 4, Group Three's plenary conference)

> … because of their illiterate capabilities. (Saul, Week two, Group Three's plenary conference)

A third set are more befuddling and could not be repaired with grammatical changes or more appropriate word choices.

> Charles-Pierre Baudelaire, a nineteenth century literary and art critic, was inspired by his perceptions which transcended the rudiments of verisimilitude. "Freedom of conscience" (307) had awakened the internal values that interpret creativity and allowed Baudelaire to employ räsoneiren in resisting "flâneur" (311). (Saul, Week 5, Group One's working space conference)

> Therefore, man's resistance to assimilation within a social median may have manifested itself to 18th century Enlightenment. (Saul, Week 5, Group One's working space conference)

> It seems that society's willingness to be spoon-fed and herded into a predetermined paradigm of thought and development leads an ephemeral existence. (Saul, Week 2, Group Two's plenary conference)

> Language and how we use it, really is a pragmatic assertion of our ideologies, which remain personal, and is agreeable to the values of both the listener and the person using the language. Moreover, how language is used is a reflection of the individual's lived experiences that discovers meaning (or truth), which expresses who they are, and the society within which they live. If intellect is the capacity for understanding and knowledge, the ability to think, then finding a systemized conduit becomes a humanistic requirement, rather than being content to just exist. Therefore, the intellectual engages entropy as a means to subsist. "History is destined to repeat itself" (Maimonides, 1135-1204). (Saul, Week 12, Ruth's conference)

So far, I have provide two accounts of Saul's posts, his and mine. To add some contour to this two dimensional portrait, I will add the other students' interpretations. Their understandings of the conference activity, after all, is the object of this study, and it is at least as important as mine. Further, their assessment of each other's activity contributes to an understanding of their experience. In the lore of interpretive research, there is an Indian fable that is used to show how a limited perspective can lead to misinterpretation. It begins with six blind men visiting a zoo to learn about elephants. Depending on which part of the elephant they encounter, they mistake it for a snake, a wall, a fan, a spear, a tree, or a rope. The story is meant to teach that in order to fully understand something, we need to observe it from more than one perspective. In keeping with this lesson, I will present multiple perspectives of various features of the conference throughout the five portraits. I begin with Ruth's interpretation of Saul's posts.

The topic of cumbersome messages comes up with Ruth in a general way, so I prompt her about Saul's posts. Ruth is more understanding than I am in her assessment:

> Sometimes he doesn't pick the word he wants. Sometimes the word he uses is not the word he meant to use, I think. I've always forgiven people that, and I figure they're just trying to think out loud. Its not like it's a term paper. He writes a lot. I think he probably thinks and just writes it. I don't know how much time some of these guys have. I've always got the gist of his messages. Maybe I haven't tried to analyze it too much, I've got the gist rather than focusing on every single thought. (Ruth, Second interview)

Judith's analysis is closer to mine:

> Saul's very difficult for me to understand or to interpret. Like, I can read it through, and I'm sure that after the first reading my

> interpretation would be a lot different from his. I read it and read it and read it and try to think: "Ok, what exactly does he mean here?" (Judith, Second interview)

Judith worked with Saul's posts the same way I did:

> I find some of the sentences confusing, so I have to go back and re-read the whole thing. I mean, a lot of the time when I'm reading Saul's post I'll have to look a word up in the dictionary, not to get its meaning, but to figure out how he's meaning it in this sentence. Do you know what I mean? Or, I'll look it up in the thesaurus and I'll wonder how exactly is this sentence supposed to be interpreted? It affects the whole paragraph. So, a couple of times I was like, hmmm, I know what this word means but that's not how he's using it so I need to look it up to find out what he's trying to say because I don't want to post a response that really doesn't reflect what he's saying or what he's asking.
>
> *Liam*: I had the same experience; I would use words differently than he would use them.
>
> *Judith*: (*Laughs*). Yeah, that's what I said. I look at a sentence, and I'll think: "Wait a second, that's not what he means." So, where's my dictionary? Where's my thesaurus? It becomes a challenge, and then it takes longer to post. As I said, I go through them first, but for Saul, I mean, I have to keep re-reading it. I actually have to minimize it and then bring it back up as I'm writing to make sure I'm responding to his

> question correctly, to make sure my interpretation is actually what he's meaning. (Judith, Second interview)

Judith is generous with Saul. She is sure that his posts are meaningful, and she searches for that meaning.

I have difficulty raising this issue with Saul. On the phone, he is coherent. Finally, during our last interview, he discusses some difficulties he is having with the final essay, and his description seems germane to the posting issue:

> *Saul*: I need to find an editor; that's what I need to do. Have you ever had to do a paper where—and my biggest problem is not coming up with thoughts and ideas. I think that hurts me. I think I have too many thoughts. I think I have too many ideas. And they're all fragmented. And when I put them down on paper they tend to sound fragmented.
>
> *Liam*: You're a divergent creative thinker.
>
> *Saul*: Yeah, yeah. I think most of my ideas, most of my thoughts, are abstract. They're not necessarily concrete and because of the abstract subjective nature of my thoughts, the writing seems to be so broad-based that uh, I need to funnel things down some. That's my biggest problem. My thoughts encompass an entire book, not necessarily a paper or a few pages. It's my lousy writing style that's all. (Laughs). I have no problem with ideas, I just, ya know, I have a problem with cogent and unified clear writing. That's my problem. I don't know. I've written countless papers, but ya know? Since this course started, [the instructor] has made some comments that have been tremendously

> valuable, and he pointed out that there are issues with clarity and there are issues with unity and my thoughts need to be, well, it's fragmented, scattered a little bit. I talk about one thing and in the next sentence I shift gears into something completely different, not meaning to. One comment that caused me to spend a lot of time reflecting was, "it seems like you're writing the way you think." I guess that's a natural thing for most people, but I need some discipline. There's the manner in which you think, there's the manner in which you converse or dialogue, and there's the manner in which you write. I guess there's always the assumption that when I write I'm writing to an audience who's familiar with the subject and they don't expect that. Yeah, I need an editor. (Saul, Third interview)

Saul's postings are of three types: 1) abstract, inductive intellectual analyses, 2) speculative explorations, and 3) expositions. He does not discuss a man; he discusses mankind; he does not discuss a church, he discusses the Church, or better yet, institutions or religion. The following analyses typify many of his posts:

> Marshall writes, "In the East, the only available form of dissent was mysticism, which was of no particular benefit to society. Mysticism, like drugs, offers personal escape from intolerable circumstances"(p. 69). Can it not be said that this may be true about all religions and why is it that masses embrace an eclectic manner of religious thought in the first place? What motivates people to embrace an abstract concept such as a higher universal order? I would also point out that there are

religions older than Christianity that have a strong foundation in Eastern mysticism which established lifestyles for entire societies. This said, I do agree that religion as a whole (not just mysticism a component) offers an escape. It is up to the participant to assess its value. Good group! (Saul, Week One, Group One's plenary conference)

It seems that history overflows with accounts of human failings and our obsession with success and personal gains. Simply look at the history of war. Jealousy and envy have been a contributing factor for most. My comment about human failings is a somewhat cynical reflection about mankind. The same mankind that creates institutions. (Saul, Week one, Group Three's plenary conference)

Was mankind motivated by a monotheistic conviction or a fear of mortality? Why did society allow themselves to be controlled by a divine faith and is this a typology of mass hysteria, or a response to an inherent weakness in human character? (Saul, Week one, Group Three's plenary conference)

All this makes us ask the question, why did society evolve? Was there a master plan from the beginning of civilization with clearly defined outcomes? I believe social change was a response to persistent and

> concentrated efforts to address social disorders. I believe the emergence of the University was simply an overdue response to society's need for intellectual stimuli. The stagnant and linear approach to authority that the church had displayed was simply placed into question. We are looking at an embryonic period of social and intellectual development and one where society, in its quest for universal answers, resists assimilation and pursues a pattern of inquiry not seen in society since the likes of Plato. It seems that society's willingness to be spoon-fed and herded into a predetermined paradigm of thought and development leads an ephemeral existence. Resistance and man's struggle with his own significance often opens a new window for change and social development. (Saul, Week four, Group One's plenary conference)

Saul's posts are populated with talk of humankind or mankind or institutions and attempts at inductive synthesis. His account of this is that postings should "transcend the rudiments of topics being discussed" (Saul, First interview). Commenting on the posting above, he tells me, "This type of post elevates the dialogue to a level of achieving a greater understanding of why man continually questions authority and the positivist's view of the rationale behind it" (Saul, Email correspondence, March 12, 2004).

There are several examples of the other two ways in which he treats content in his posts—speculative explorations and expositions. It is important to distinguish these types of treatment from what Marshall does or what Ruth does. They engage in informal argumentation, that is, they make claims and provide grounds for their claims in a way that is designed for others (persuasive argumentation) or for themselves (expressive argumentation). Saul, unfortunately, provides only claims, assertions, expressions of norms, and supports them only by assumptions or questionable quotes from the text or external references. This is why I have labelled them *speculation* and *exposition* rather than *argumentation*.

In the expository posts, Saul presents a series of unsupported, didactic assertions like the following:

> George W declared war on terrorism as a political and humanitarian response to grotesque injustices done to America and western thought, resulting in the incursion of Afghanistan and Iraq. Although, the coalition forces may not have found weapons of mass destruction [WMD] in Iraq, who among us believe that Iraq was not guilty of producing and using WMD against their own citizens? Is it essential to find the fox in the henhouse in order to prove it was responsible for the missing chickens? Admittedly, this may be a broken analogy, but does mankind not have an ethical responsibility to protect life; recognizing life remains without borders? I do not substantiate imposing an arbitrary value system on other people or cultures, as values are the result of personal, and perhaps unimpeachable, circumstances. Society can however, intervene and protect the rights and privileges of others when human lives are endangered, but not because of cultural

> distinctions or for political gains. (Saul, Week nine, Student moderated conference)

In the posts characterized as speculative explorations, there is an equal disregard for evidence, but he is not making assertions or knowledge claims, he is exploring:

> Question 1
>
> *In considering the prevalence of personal narratives in the media (books, film, television, Internet, etc) do you see our society as becoming "too personalized"? Why or why not?*
>
> [Student], let me be the first to congratulate you on your paper. In your first question, I think you have highlighted an area of great interest for me personally. I believe narratives are telling stories, not just about what we are as individuals, but stories about our personal constructs which emerge out of lived experiences and a need to give character and meaning to those experiences that search for truth. Our private stories express who we are, and the society in which we live. Reading/listening to narratives and living them through the events of the storyteller reflects a greater value and understanding of those experiences, which shaped the storyteller's ethos. [The author of one of our texts] says, "Narratology is the study of how stories work and how readers understand them". (153). I think the author could have taken his explanation further to include its potential impact on civilization. Life cannot always be unravelled through our own eyes,

or is always embedded in empirical-analytic circumstances because they remain personal. If narratology allows us a more inclusive understanding of the circumstances, which shaped our culture, we might be in a better position to teach, and therefore influence, future generations to enable a more revering society. (Saul, Week 13, Student moderated conference)

I mentioned that all subjects, with the possible exception of mathematics, are laden with cultural biases. Do the sciences perpetuate social values, and if so, in what ways? (Saul, Week 11, Marshall's conference)

Hi Marshall,

I found your paper to be well planned and written, something you have demonstrated throughout this course with apparent ease. My opinion about your question is, although there appears to be few absolutes other than zero, mathematics as any science, is an unmovable system that leaves little room for personal reflection. Perhaps even science can "perpetuate social values" if we reflect on the meaning it has for our participation in society. [The author of one our texts] makes a reference about paradigms and authors being able to say something that is "eternally true about the human condition". (80) What he has exemplified in this statement, is we all search for truth in where ever

> we apply ourselves. The fundamental question in this assertion, for me is, what is truth. Transcending a rudimentary understanding of truth as being an actuality or fact, might suggest that truth could mean different things to different people, and that truth emerges out of lived experiences and a need to give shape and meaning to those experiences that searches for truth. In identifying a process for making sense of truth, it is common to establish two conflicting paradigms that declare to have a point, and the truth lies in a moral median located between equally distant and untenable boundaries within those paradigms. Truth is a reflection of our lived experiences that discovers meaning, which expresses who we are and the society within which we live. (Saul, Week 11, Marshall's conference)

Learning through online discussion

Saul is one of the students who offers enthusiastic praise for the conference. Where the others have mixed emotions, he is unabashed. Yet, as I read through the transcripts of our interviews and the fifty emails that we exchange during the course, I cannot find a clear statement of why; nor am I clear about how the conference enhances his experience. In preparation for our second interview, I notify him that I want to hear about a conference experience that was particularly valuable. He responds:

> I am not certain that there is anything that stands out for me in the conference area other than the entire experience has been a positive

> one. If I think of one before the interview, I will let you know (Saul, Email correspondence, March 24, 2004)

He does not think of one. Previously, I had emailed him a more direct question about the role of the conference in the course, but I had difficulty interpreting the response that he emailed back:

> The objective of our dialectic/dialogical learning is to engage in interpersonal as well as intrapersonal thought patterns that will demonstrate awareness of societal, political, and religious circumstances that shaped development of civilization throughout recorded history. In doing so the learner should be able to demonstrate, through their conference activities, that at a minimum, they have completed the required readings and have a full understanding of the circumstances that created the time and space in which we live today. The dialogue should also enable the learner to demonstrate an advanced understanding of research methods that support their positions (Saul, Email correspondence, March 20, 2004)

In another email, he touches on the value of encountering others' perspectives: "The thing that is meaningful for me is dialogue that enables me to look into and therefore reflect on other paradigms that I had not previously considered" (Saul, Email correspondence, March 30, 2004). This analysis is consistent with what other students in the course tell me. This explanation is consistent with his previous description of the *valuable* posts:

> The majority of the responses are: "I enjoyed the paper, I hadn't thought about it in those terms, but now that you bring it up …" and then they go into a whole descriptive analysis of how it's taken them into an entirely new realm that they hadn't considered previously. That will also take me into new area and perhaps make me look at my position from a new direction. (Saul, First interview)

Saul points to an example of this type of response, and I retrieve it from the conference. In it, the respondent identifies an interesting aspect of the group's post and elaborates on it.

> Hi [group]
>
> I find it interesting that the powerful church of the time allowed the development of another institution despite the ecclesiastical curriculum.
>
> To quote your analysis: "When masters and students inquired into the nature of man, God, and the relationship between the two, it became impossible to limit the inquisitive mind to an exploration of religious matters. New thinking was characterized by "the attempt to apply intelligence to the problems of society" (p.306).
>
> Why do you think this did not cause another type of revolution vs. a renaissance? One would think that too much "free thinking" may have brought many students to be "burned at the stake" or be considered blasphemous in the eyes of the church if they ventured their thinking

> too far. What do you think? (Saul, Week four, Group Three's plenary conference)

In describing the post to me, Saul commends each of its properties, especially the concluding question, which continues the dialogue.

The explanation that I find tangible is one in which he talks about the sudden illumination he experiences when reading others' reflective posts:

> *Saul*: I'm looking for the ah ha factor in anything I read. And whether its one paragraph or eight paragraphs, if I can get the ah ha factor out of what I'm reading then its very valuable to me.
>
> *Liam*: Can you think of a specific post?
>
> *Saul*: No. Yeah. I guess anytime that I've had an ah ha moment it hasn't had anything to do with the course readings; it has had everything to do with where the understanding of those elements, the understanding of those circumstances, in the course readings has elevated the dialogue to a set of personal circumstances, a set of personal experiences.
>
> *Liam*: *Your* personal experience or when somebody's writing about *their*
>
> *Saul*: No, when someone's writing about theirs and the ah ha moment might be, "Oh yeah well I didn't think about that or I didn't consider doing it that way or thinking about it that way or managing it that way" or another ah ha might be "wow I thought I was the only one doing that; somebody else is doing it too."

Liam: Doing what for instance? Do you mean that they're interpreting a reading a certain way or that they're

Saul: Yeah, they're interpreting it in a certain way and they're applying it. I think that most of my moments come from application—you know reflection and application. (Saul, Third interview)

It is interesting that Saul—whose posts stand out for their abstract, inductive, and intellectual treatment of course content—derives the most value out of concrete, deductive, experiential postings.

Jacques

Background

Jacques did his Bachelor's degree in Social Work at the same university where I did my undergraduate degree in Psychology and Philosophy. Since then, he has moved to a northern and remote part of the country where he works in the social services field. He also has his own consulting practice.

Along with this course, Jacques is also taking one other graduate course from WCU and two undergraduate courses from another university. All of these are offered at a distance, and all include computer conferencing.

He enrolled in a graduate program in pursuit of a lifelong goal—a doctoral degree in some branch of human services. WCU's distance model enables he and his wife, who is also a professional, to maintain their careers while Jacques studies. The diversity of the program with its flexible curriculum and timetable allows him to explore a wide range of interests at a pace that fits his schedule.

He is the archetypal self-directed, autonomous, independent, and highly motivated learner:

> I'm not the type of person to just sit back and pelt out a 70% effort. You get out what you put in. To get 90% in a course, you have to put in the effort. I always try to put in more in any course I take. My assignments are submitted way before they are due. In fact, all of my assignments are submitted already. I'm not going to wait around. I'm going to take charge. (Jacques, First interview)

At one point, I describe his actions as "rolling with the punches," and he interrupts to correct me: "That would be too passive. What I've done is taken a leadership role. Whatever happens here, I'm going to work as a leader, a positive coach, and I will contribute 110%." (Jacques, First interview)

Conference activity

In response to the prompt, "Take me through a typical day," Jacques paints the following picture:

> I check the conference everyday and print out all of the messages. I need to read all of the posts to formulate a question or comment, and I don't have time to sit at the computer and do that. Besides, I only have three days to respond to this stuff, right? So time is limited. I print it out, I read as much as I can, I look at what other threads are there, and I make comments. At suppertime—while I'm trying to talk with my wife and make a grocery list—I'm reading this stuff and making a mental library file. Then I'll run to the textbook when I've got five or

> ten-minutes and read up on the salient parts of the post. Then questions and comments will come to me, and I'll just kind of scribble them down point form on a paper. Then when I've got three-minutes during the day while I'm at work, I'll write, in Microsoft Word, the questions I have for the group and save it on diskette. I'll go back online later at night and cut-and-paste it and send it (Jacques, First interview)

Reading through his postings, I get a slightly different impression of what he is doing. His style does not appear to be interactive. There are only two instances in which he posts more than once in a conference, and both times he is quick to untangle himself from any subsequent exchange. Most of his posts arrive at the end of the conferences on or after their closing dates. Typically, he posts an answer to the original question, referring rarely to intervening posts and only to compliment them in a general way. Occasionally, these posts receive replies but he does not respond. His posting activity does not project an understanding of the conference as a site for on-going, extended conversation. Judith's interpretation of his activity is similar to mine:

> I thought that he was posting at times and in such a way that he could avoid interacting with other students. I have some experience with him in another course as well. He generally posts for that course at the end of the week as well. This past week our conference was worth 10% of our final mark, so he posted a little bit more. He responded to some people's postings midway through the week which is very odd for him

> because generally he only posts at the end of the week (Judith, Third interview)

When I interviewed Jacques, I found these interpretations were mistaken despite the accuracy of our descriptions. Something Judith and I were not aware of was influencing his activity:

> Living where I do, I don't have the technology to support continuous discussion. The data lines are frozen. The Internet is unreliable up here. People who live in urban areas take for granted that email will work, the phone will work, or the Internet will work. Not here. (Jacques, First interview)

Jacques laments the unreliability of his Internet service several times during our telephone interviews and email exchanges. Though he wants to participate more often, he can only access the Internet from a local community centre that has a satellite connection. At a couple of points in our conversations, he seems to assume that the focus of my dissertation has something to do with telecommunications infrastructure: this is a focus that he encourages. Later in the course, the technical problems get worse:

> The only viable ISP provider here can no longer provide online services to northern residents. The problem is with outdated telephone lines, which I'm told will take 2 years to resolve. In the interim, I am restricted to very limited use of the community satellite system after hours. Otherwise, I would have had no computer access. This reality is severely limiting the fluidity and quality of my online interactions.

> Restricting my online access has reduced the amount of daily, active conference participation and the resulting enjoyment isn't the same. (Jacques, Second interview)

It is not clear, however, that Jacques's participation would be different if his connection problems were solved. When I ask him for his thoughts on interaction with peers and the instructor. He thinks back to his undergraduate days:

> When I was an undergraduate, I was focused on getting my degree. I knew what I wanted to do, so I registered, got my materials, went home, and did my work—like a machine. I studied, learned, went to my exams, and handed in my assignments. I wasn't there for the social aspects. If I had any problems I'd ask the teacher directly. I knew how the system worked, and getting to the end meant working with the professor directly. I had to show him that I was an active learner and participate in what he wanted to see happen for my grades. I ended up having relationships with the professors themselves, which circumvented the need to talk to anyone else. In other words, don't call the pope; go to the big Guy Himself. In this course, if I have a problem or if I'm confused about what's expected or if my grades are off or if I misinterpreted what was asked, I tend not to ask [my group members]; I email [the instructor] directly. (Jacques, First interview)

Jacques's wants to move efficiently and purposively toward his goal (his *machine* metaphor is apropos), and chat lines or socializing are only distractions. The only reason for interaction is to demonstrate this determination to the person who controls assessment or to solve administrative problems. Thus, the only person one need interact with is the instructor. One might interact with peers, but this is only an indirect way of interacting with the instructor.

Like Judith, he is concerned with engendering a warm and supportive environment. This is accomplished through effusive complimenting, sometimes of specific elements of others' posts, other times of general expressions of agreement. The following post is typical:

> As I was expecting, you did post a superb answer to that question Marshall. I liked your flow and approach used to explain the post-Constantine "pursuation" tactics to forcefully absorb and recruit the pagan curial class in to the church. Similarly [another student's] strategically explained interpretation for both Constantinople's and Krystelle's historically supported justification position also win gold medals in our class' Olympics! (Jacques, Week Nine, Student moderated conference)

In his posts, Jacques alternates between concrete and abstract treatments of the readings and the others' posts. The concrete treatment dominates. Like Ruth, he brings his experience to the readings, and he writes about the readings through his experience. I put this observation to him and he agrees:

> You've got a bingo. When I take a course such as this theory course, I can't help but draw on my experience. I draw on my experience working with human beings, my culture, my wife's culture, my rural-versus-urban isolation. I make everything personal. Whether it's this

> course or my other courses, whether its I go to a staff party, or whether I'm at the grocery store, the whole thing is a big stew. I'm an active participant. (Jacques, Second interview)

I point out that others have different approaches to the conference, and Jacques has noticed this:

> Saul has a very abstract relationship with the material. (Laughs). Not confusing, I just mean he doesn't seem to be personalizing the content. He seems to be talking about it at a distance in a very intellectual way and not in a personal tangible way. It's just unfortunate. If you're going to process it in an aloof or intellectual or distant manner, I think you're really missing out on the participatory elements of the conference. I mean you have to jump in, you can't stay on the side and spectate and participate at the same time. You're either in or you're not. (Jacques, Second interview)

Jacques provides two explanations for his approach to posting. First, it is an effective way to learn:

> It's the most tangible way I can integrate the core concepts of the course. It's a good hinge for me. I just see that the real good kind of a hinge point to kind of propel a lot of these issues because they make sense, like there's a lot of real things that I can touch them with that. When I was taking courses on feminism, I used to use analyze things and talk about things in my life through that perspective. Now that we're taking structuralism and post-structuralism, I use that. What

> better theory than one based on an analysis of language to think about Native issues—especially when I'm married to a Cree nurse. You don't get better than that. Hopefully someone can see that and take the theoretical stuff and make it real. (Jacques, Second interview)

The second explanation for this approach to posting has to do with his job.

> I wonder if it had something to do with my career? I mean I work in a field where you have intimate relationships with people everyday and sometimes with hundreds of them a year. That changes you as a person. When you're dealing with human problems and interacting with people, you can't go in there like its a normal job. Everyday is different, every human is different, and there's a connection there. You change. When you take a course such as this theory course, it can't help but draw on all of that wealth of experience that you have working with humans. Your humanity comes out. (Jacques, Second interview)

There are several examples within the conference of posts in which Jacques concretizes and personalizes the readings. Three examples suffice:

> Some very interesting questions Saul. To answer question #2, I would like to discuss language/idea conflicts from my personal life and from history, rather than derive one from a book. In terms of languages, I do feel that languages are concrete representations for ideological paradigms. Sometimes, disparate ideological paradigms do not have a

common "language bridge", which can result in misunderstanding and conflict. For example, I am a Franco-Ontarian who can speak fluent English and French. My wife is a Manitoban Cree who can speak English and Cree fluently. I don't understand Cree, and she doesn't speak French. Our language of mutual communication must be English. Early in our relationship, we experienced communication problems due to language use, as there are for instance, no English words for many Cree ideas. Consequently, after asking her certain questions, I misinterpreted lengthy response pauses as rude avoidance or non-participation in the conversation. We not only speak in a language, we think in that language as well, and language can limit our expression. Language does reflect ideology, and due to English miscommunication, the interactive glue between my wife and I became disconnected momentarily until the intended English response (understanding) was better explained and conversation restored. Attached to the limited reality of one's paradigm, it would be difficult to explain the awkward, frustrating confused feeling which was experienced during those occurrences. (Jacques, Student moderated conference, Week 10).

Question 1:

"Can you provide other instances of research paradigms that are adequate or inadequate in relation to the type of research in which they are used, giving concrete examples of how and why they do or do not fit?"

SNIP

Faults appear when the application of a empirical scientific model is used to determine the effectiveness of a specific therapy intervention within the field of social work. Unlike medicine or psychology which use science to measure output, social work interventions are reflections--not measurements--of transactions between people. As no two people are the same, neither are no two therapists, no two situations. If a scientific model could universally solve all our complex, human relationship problems, then we in turn would be reduced to psychologically programmable automatons. Scientific thinking continues to create standardized "How-to heal-in –12-easy-steps" programs that cannot fit every culture, language, context or circumstance, as no singular model ever succeeds (unless you're a Dr. Phil fan, and believe only he has the ways to rid you relationship problems and unwanted fat). (Jacques, Unmoderated conference, Week nine).

Question 1: Where would you situate learning and employment on the continuum?

That is certainly a robust question to tackle. Personally, I am fortunate to have pursued social work as a career. Earlier on, due to social conditioning, I bought-in to the mechanistically driven, technique oriented, theory based, “how to” step-by-step counselling approach, to this powerful human privilege ascribed to therapists. Fortunately, throughout my career, some very bright teachers managed to analyze, crack open, and expose just about all of my core belief systems. They then challenged me to explore how these belief systems were impacting on my choices of interventions, and consequently on other people’s lives. I then explored the product of those unchallenged beliefs in shaping my own personal values and choices. That was a cathartic experience. I temporarily threw any mechanistic programming overboard, to be left “swimming” in the vast sea of “relativistic” postmodernist possibilities. Though confused at first, I eventually relinquished my rational need to rely on the mechanistic, empirical and universal. As no two people are shaped by the same events, clinical social work as an occupation accommodates personal independence towards eclectic, holistic, non traditional and postmodernist approaches. In fact, these ideologies are oftentimes encouraged.

To answer the question, I simply have no idea anymore where I manage to fit in this continuum. Actually, I think both paradigms are

> so ideologically divergent that they are not easily measured on a conventional sense of a "scientifically based, linear" continuum.
>
> SNIP (Jacques, Week one, Group One's plenary conference)

Jacques's activity in the conference does not reflect an understanding of it as a forum for interaction, whether it is his ISP problems, his workload, or his preference for independent study. One situation in which this becomes noticeable is when he does not respond to direct challenges to assertions that he makes in his posts.

This happens a few times during the conference, beginning in week 1. Marshall comments on an inconsistency of fact and interpretation in one of their readings. Nested in compliments, Jacques expresses agreement with Marshall, but makes a refined, counter-proposal. Marshall reasserts his original position with more evidence. In his next post, Jacques concedes Marshall's argument. When I ask him why, he cites two of the three issues listed above (ISP problems and workload), and adds another:

> Despite my vociferous counter views, I voiced agreement with Marshall's post to honestly acknowledge his perspective. In reading his post, I empathized with his perspective, detached myself from my beliefs, and briefly experienced the validity of his viewpoint. Marshall truly taught me to remain open-minded and to explore other viable realities. As this course is progressing, I can more clearly acknowledge and appreciate the intellectual and personal diversity of the participants. In hindsight, having an intellectual disagreement with anyone in this theory course seems naively ill conceived on my part. I

> would have dialogued more with Marshall that week had my ISP been available. (Jacques, Third interview)

Three similar incidents with Marshall prompt Jacques to add this additional analysis when I speak with him later in the course.

> Marshall has some very strong ways of seeing things. If I wanted to change the way he saw the world, it would approach it like I was trying to catch a goldfish, I wouldn't ram my hand into the goldfish bowl and try to grab the goldfish and take it out of its captivity. A better approach would be to gently put my hand in the water, and slowly over time acclimatize it to the environment. Then I could put my hands around the goldfish and slowly lift the fish that way. With Marshall, I'm hoping that by posting in the way that I have, that his worldview will shift over time. (Jacques, Third interview)

Jacques's understanding of persuasive argumentation, especially in relation to issues that he feels strongly about, is less confrontational and dramatic than Marshall's. He also notes that it takes time, which is not designed into their conferencing activity:

> In the conference you've got like 3 days to discuss an issue. Or a week at the most. So, you're not going to change someone's opinion in three days by arguing with them. You can't do too much in three days. However, there are conferences every week and there has been since the course began. It's an accumulation of different perspectives, literature, group activity, individual assignments, and this barrage, or

> *collage* if you will, creates a shift in consciousnesses after awhile.
>
> (Jacques, Third interview)

Again, argumentation or debate does not reflect Jacques's notion of what the conference is for, and they are not evident in his conferencing activity.

Learning through computer conferencing

Jacques is enthusiastic and positive about the conference, as he is about all the elements of the course (the instructor, the other students, the readings, the conferencing software, etc.). Like many of the students, when he thinks about the role of conferencing in the course, he does not talk first about learning, but rather how it enhances his experience in other ways:

> Based on what I've seen in the conferences and how I've been included—there's an *inclusion* being in the conferences—the course would lose a lot of its value and flavor if there were no conferences. If I didn't have the conferencing, it would be a fairly isolating experience. It would be, "What do you want me to do with the entire medieval history: Write a big essay?" Being that each of us is working in an isolated environment and that this is a distance education model, the conferences need to be more than just an abstract, intellectual, post-paste thing. I mean, the whole idea of this forum given that we don't have face-to-face contact is to compensate for that as best as we can--provide an warm, supportive environment online that has more than just comments about the content we are studying. You could do

> *that* by correspondence without any conferencing. (Jacques, Second interview)

Despite his insistence that he prefers to work independently and that he "doesn't really have time to chat," he seems to take some pleasure in communicating with the others:

> I was just chuckling like a hyena here at the screen when I was posting my thing because I was responding to [another student's] post, and I kind of ended it by asking 'how far down can one deconstruct,' and I didn't know if it was appropriate for me to use the metaphor of exposing the toilet and then having to go search for the plunger. But I was laughing when I put that on. I hope people saw the humour in that, didn't take it literally, who ever reads it. (Jacques, Second interview)

When he turns to its role in learning, he thinks that the effects may be delayed, but they are cumulative and lasting:

> Once the course is over, we'll say "well that was kind of neat," but then it will dawn on us. We might not have learned a lot from each post, but after two months of this, it has a long lasting effect, as [the instructor] was saying. A month or two after the course ends, or maybe even a year after, it will hit us what really happened. You see, we're all changing as a result of these dialogues. It forces us to incorporate things we would never have thought of that may even lie dormant for awhile (Jacques, Third interview).

His account of the specific processes that contribute to learning and the types of learning they contribute to is complex. In an early interview, he argued that peer interaction was only for camaraderie, not learning. But later, his position shifted. In later interviews he told me that posting and reading others' posts contextualized his view and located or positioned it. Depth and hue were lent to his opinions when he read variations of the same from others, and divergent opinions gave him a view of issues from other sides:

> The conferencing about such densely packed and expansive material has a value for this course. I get to understand how my way of seeing things contributes to, or is different from, or is mirrored in other peoples' ways of seeing things. I understand myself in context of a larger picture. Without that, mirroring the text would not have a good ability to teach me anything. I am taught by my comments in response to other people's worldviews. The fact of seeing how they see makes me question what I'm reading. It makes me question myself: "why do I believe this?" And actually can change my beliefs based on what other people write. Here's an example. One of the groups' reflective analyses had to do with anti-Semitism during the Middle Ages. A student from another group argued that what occurred in the Middle Ages wasn't anti-Semitism, it was anti-Judaism and that there's an important difference. From the point of view of understanding the text, that changed my understanding. I actually went back, and I read and I asked questions of other people I know, and it turns out that there was

> some merit to what this guy posted. Consequently, my worldview was affected. These things are not subtle, they're direct and they're powerful. But then you start to question, and you make your own inquiry. Like I wasn't emotionally attached to the text, but after reading that posting I went back to the text and said, "Hey, did I read this correctly?" Then I read this response from the guy after him, and he had a different perspective. So then I incorporated that perspective, and went back and read it from that perspective. Every time you put on a different lens it changes the way that you're incorporating the material and you become much more deeper. (Jacques, Third interview)

Not only do the exchanges in the conference contribute to his learning, some of them prompt Jacques to return to the text or to find additional sources of information. Unfortunately, the tempo of the course, which Jacques described as *fast-paced,* short-circuits some of these processes:

> *Liam*: Did you participate in that conference, did you respond to that?
>
> *Jacques*: I haven't had a chance to, yet; it's too mind-blowing! (Laughs). In order for me to make good quality responses, it would take me a page online, and to do that I'd have to go back and actually read up again. I just thought, this is a superb posting that this guy did but I just left it at that and I sit back and I linger in thought, thinking "Interesting." Eighty percent of the things I'd like to say, I don't have

> time to actually post. I think that I learn a from other peoples' postings. (Jacques, First interview)

The value of reading others' posts comes up often. Aside from the value of positioning his interpretation amid others,' the others' messages can add some context to the otherwise inert and decontextualized ideas presented in the readings:

> Some people just report what it says in the book, and they use a lot of quotations and references to support what they're saying. They should just say what they have to say; they don't need to support it with an author. Everyone is very bright, and they all have a unique vantage point, and when you read through all the posts, you get a really good kind of mosaic of the kind of people who are in this course and that variety would really exponentially multiply if people would incorporate the readings into their own perspective rather than just summarizing the text. Blend it into their personal values, integrate their world more. That makes another reader think about things in a completely different way. This puts it into a context. When I see postings from people who I don't necessarily subscribe to in terms of their views, it's still interesting to read their posts. Their views actually hold a lot of their own truth in there. You say to yourself 'I can empathize with that, I actually see that.' Then you change as a result of that it kind of reawakens you to, my god this is how I got to where I am, and I'm reading this person, well I should explore this a bit more, keep that mindful when I do stuff. (Jacques, First interview)

This leads, it seems, to something like a paradigm shift or the type of radical change in perception or insight that the gestalt psychologists describe:

> I'm learning from how other people interpret the book. If I've missed the mark, or if I need to kind of post something that integrates that stuff if I get like this ah ha moment. Like, I see the whole world different now. I see it. *I see it.* Its not that I understand it; I actually *see* it. Its like a different vantage point to be able to process it then be able to see it. I can actually live it, I see it. (Jacques, First interview)

The other process that Jacques finds valuable, as I have described, is the reflective process that comes with composing his posts. The conference provides him the opportunity to make and express connections between the readings and his experiences.

Ruth

Background

Ruth and her husband live in Alberta where she currently works fulltime in the Health Services field. This is her second career. Until a few years ago, Ruth was raising her children while working as a teacher.

Her primary reason for being in school is to satisfy her intellectual needs. "I always like to be learning something" she tells me. "Its been 5 years since I was in university, and I was looking for something to stimulate my interest" (Ruth, First interview). She adds, "One of the reasons I took this course is because I wanted to do some reading and be more accountable for what I was reading instead of just sort of reading on my own. I wanted to have to write something about what I was reading and have it read by other people" (Ruth, First interview). With an undergraduate degree and a postgraduate diploma, she felt it was time to consider a Master's degree. The curriculum of the WCU master's program seemed flexible, and because it is delivered entirely over the Internet, it will not interrupt her career. A similar Master's program, also offered by WCU, interested her, but she did not have all the prerequisites. It also demanded attendance at on-campus sessions, and that was unacceptable to her.

This is Ruth's first experience with computer conferencing; in fact, it is her first experience with distance education. The information and communication technologies (ICT), which are central to this type of delivery, present some challenges for her. A few times during the course, she posts the same message several times moments apart. When the students, the instructor, and I open the conference on January 19th, this is what we see:

> ruth
> **New**
> Email
> Re: Group 4 Responses to Week One's Assigned Readings
> 45739
>
> Donatists demanded that only sacraments administered by priests pure in heart and action could be valid. This would have meant that people whose priest was not pure were not assured of salvation. By insisting that the it was the office of the priest and not his personal sanctity which gave validity to the sacraments, the church was able to keep the allegiance of the people despite the behaviour of its priests, who for personal or political reasons might compromise the teachings of the church. If the church had not tried to adapt to the ruling cultures it would probably have been stamped out.
> 01/19/2004 12:00
>
> ruth
> **New**
> Email

> Re: Group 4 Responses to Week One's Assigned Readings
> 45740
>
> Donatists demanded that only sacraments administered by priests pure in heart and action could be valid. This would have meant that people whose priest was not pure were not assured of salvation. By insisting that the it was the office of the priest and not his personal sanctity which gave validity to the sacraments, the church was able to keep the allegiance of the people despite the behaviour of its priests, who for personal or political reasons might compromise the teachings of the church. If the church had not tried to adapt to the ruling cultures it would probably have been stamped out.
> 01/19/2004 12:01
>
> ruth
> **New**
> Email
> Re: Group 4 Responses to Week One's Assigned Readings
> 45741
>
> Donatists demanded that only sacraments administered by priests pure in heart and action could be valid. This would have meant that people whose priest was not pure were not assured of salvation. By insisting that the it was the office of the priest and not his personal sanctity which gave validity to the sacraments, the church was able to keep the allegiance of the people despite the behaviour of its priests, who for personal or political reasons might compromise the teachings of the church. If the church had not tried to adapt to the ruling cultures it would probably have been stamped out.
> 01/19/2004 12:03 (Ruth, Week one, Group Four's working space conference)

Ruth down plays these issues in our interviews, but when similar events happen to other students, she is quick to commiserate:

> Thank you, Jacques, and thank you again. I see you share my frustration with wondering where that darn post went after you pressed "Send"! (Ruth, Week nine, student-moderated conference)

Other comments make me think that the communication system may be more of a distraction than she lets on. Commenting on the purpose of the *introductions and* *greeting conference*, she explains, "I think the point of that conference was to make sure that you could get onto the site with what you had. It was for that reason as much as to do your biography" (Ruth, First interview). The other students do not mention this rationale. The comment that originally aroused my curiosity, however, was the revelation that she was only able to log on to the conference from work, not from home, because of some difficulties with her password: "To be honest, I've not actually tried to see if I can access it at home. I haven't got my password. I've left my password at work. I can't get in without it" (Ruth, First interview). I suspect that she is self-conscious about this when she gives her group another reason for her inability to complete some task over the weekend.

Some of the inconveniences she encounters may be no different from those encountered by someone with more experience. Viruses, for instance, interfere with her course work, as reflected in the following messages whose main purpose is to coordinate group work:

> Hi [group members]:
>
> I think that would be an interesting and important topic. I'm willing to go for it. We are having a lot of computer problems related to that new virus. My computer is running as slow as molasses. However I will check in with you both again tomorrow. (Ruth, Week one, Group Three's working space conference)
>
> Hi [group members]

> I thought I posted this yesterday, but it didn't go through. I am having virus problems. Here again are my thoughts on the assignment. (Ruth, Week one, Group Three's working space conference)

Toward the end of the course, I ask her how it's going with the technology:

> *Ruth*: I've got my password at home now; I can access it at home pretty well. Its, I have no idea how, how, ya know, uh, I just type, I know we've had all this "how to use html" and all, this is just, I've no idea. When I see some of the other guys they have these little figures laughing and twinkling [*animated icons in the conference postings*] I don't know how they do that either.
>
> *Liam*: [The instructor's] quite a show off.
>
> *Ruth*: Yeah, yeah. I had to be told twice how to attach the tutor mark sheet. Everybody at work tried to help me but nobody could.
>
> *Liam*: You don't sound frustrated though.
>
> *Ruth*: No, no. I just figure that I know enough technology to do what I have to.
>
> *Liam*: Its not interfering with learning the content or with your enjoyment of the course?
>
> *Ruth*: No, no, I have to do lots of typing at work anyway. I have to type up reports on the computer, I'm used to doing that. It's not a big deal (Ruth, Third interview)

With a combination of humour and determination, Ruth makes peace with the technological presence in the course.

Conference activity

Ruth is one of the students whose posting style is constant throughout all of the various types of conferences. Whether she is participating in the working space conference, the plenary conferences, or the student-moderated conferences, her style is consistent. I will describe that style in this section.

Ruth tells me that she does most of *the computer work* from her office. At home in the evening, she is tired and doesn't want to sit in front of the computer like she has been doing all day. Besides, her husband—a realtor—does a lot of his work at home, and there is only one computer. Therefore, it is at the office that she checks for new assignments, reads the others' postings, and submits hers. All this occurs between clients, before work starts, and during her lunch hour.

At first, Ruth posts tentatively. Her first message posted in week one's *Introductions and Greetings* conference is one-third the average length of the others'. She tells me in an interview that she was waiting to see what the others would do. The frequency of her posting increases through the first four weeks. During the first few weeks, she considered withdrawing mainly because she felt intimidated by the elaborate jargon the other students were using. A supportive co-worker encouraged her to persist.

Her writing is clear and coherent. One of the students provides a good characterization of her posts:

> Hello Ruth,
>
> I just wanted to let you know that I thoroughly enjoyed not only your answer, but the way in which you wrote it. You easily summed up a

> very complex situation in a few clear words of your own. Thanks for the insight! (Student, Week one, Group Four's plenary conference)

A lot of work goes into these messages. Ruth composes in longhand after thinking about what she wants to post, and then enters the composition into a word processor (to check spelling and grammar) before she is ready to post. When I ask how long this takes, she thinks for a minute: "Let me see. Two short responses last night took me an hour and a half." (Ruth, First interview)

The content of her posts is a mix of informal argumentation and concrete engagement with the course content. Of these two, argument is the least frequent; nonetheless, it is an important type of participation because it is one of the few ways in which she interacts directly with the other students. Other than this, her interaction is limited mainly to answering a moderator's formal questions. Her exchange with Mike in week-four is exemplary:

> Hi All,
>
> I think a balance between political systems and religious traditions is impossible. The minute an institution is formed to serve its members (i.e. labour unions), it becomes self-preserving and self-serving. Here, I think, lies a conflict of interest.
>
> [*student signature]*
>
> Hi [*student*],
>
> I agree that unions are self-serving, but that is their purpose. At the moment, corporations like Wal-Mart are trying to bankrupt their competition by paying very low prices for the merchandise they order,

> and very low salaries to their non-unionized workers. If people are not earning enough for a decent standard of living, who benefits? Only the rich will be able to afford to buy Wal-Mart's goods. I am disgusted with a society where the gap between rich and poor is steadily increasing. (Ruth, Week four, Group One's plenary conference)

She offers a similarly structured rebuttal to Judith who has argued that the author of one of their readings is insensitive in his treatment of women's issues:

> Judith,
>
> You raise some interesting points. However, I don't believe we can blame Kant for being a product of his culture. He is certainly not objective about women, but he says he believes that "the far greatest part of [humankind] (including the entire fair sex) regard taking the step to maturity as very dangerous, not to mention difficult". He certainly ranks it even harder for women than for men to be able to think for themselves, and seems rather contemptuous of women, but that was the attitude of his day. (Ruth, Week one, Group One's plenary conference)

Ruth argues in a temperate, organized, and evidentiary manner.

More common than argumentation, however, is an effort by Ruth to connect the readings to current events or to her experience. Her reply to Jason below, and the subsequent reply to a moderator's question illustrate this:

> Hi Jason:

You asked: "When does the removal of force become warranted, and does force beget force?"

I think that the bombings in Madrid last week really bring this question to the fore. Spaniards promptly voted to withdraw their forces from Iraq, even though the Iraqis begged them to stay. Now Italy is contemplating following suit. America should not have invaded Iraq for the reasons it gave, but having deposed Saddam Hussein, the West has a duty to protect ordinary citizens from Saddam's supporters. For Western forces to withdraw again is to betray Iraq one more time. Ordinary Iraqis are right to feel the West has no moral scruples.

In response to Question 2:

Cantor writes, on page 252, that until the eleventh century it was the God of the Old Testament who predominated in religious teachings. This is the tribal god whose aid is requested to mow down enemies and dash their children's brains against a rock. In the eleventh century the loving God of the New Testament began to be preached. Today we seem to be back to the idea of tribal gods. Catholic God versus Protestant God in Northern Ireland, Moslem God versus Christian God in the Middle East. When I read that Franklin Graham has denounced Islam as 'a very wicked religion', and called Moslems 'pedophiles' (don't they HAVE hate laws in the United States?) it seems to me we haven't evolved very far since the Middle Ages. (Ruth, Week three, Group Three' s plenary conference)

Ruth also makes connections between the readings and her personal experience. I see a dozen of this type of posts in the conference. I will present only two examples:

> Jacques,
>
> I certainly agree with you that kids in urban areas develop more tolerance and have more exposure to other cultures. When we first came to Canada we lived in a very small rural village in Alberta. We had moved from a very large industrial city in England. Even though they were supposedly both WASP cultures, we suffered a lot of culture shock. It seemed everything we did was wrong, by their standards. For example, we would never have asked visitors to our home to help wash the dishes after the meal; they thought we were so rude not to offer to pitch in. (Ruth, Week one, Group One's plenary conference)

> [Student name],
>
> When I worked in a school where some deaf children were partially integrated, we did discuss problems they might have in class. These kids were a little different, as their parents had chosen to have them use their residual hearing amplified by hearing aids and a teacher microphone. They were not taught sign language. Fatigue was a problem for them - they had to concentrate very hard to understand. Also I was told that deaf children had problems with abstract concepts as the school curriculum became more advanced. I don't know, though,

> whether sign language has all the nuances required for understanding abstract concepts. I can believe that deaf people do not believe they have a handicap. Do you remember the fairly recent case of a deaf female couple deliberately choosing a deaf father for sperm donation so that they could give birth to a deaf child? I find I have problems with deliberately depriving a child of a sense that most people have, but the parents felt that fully involving the child in their deaf culture was more important. (Ruth, Week 12, Student moderated conference)

Learning through computer conferencing

Ruth's overall evaluation of the conference is unfavorable. She admitted a few benefits but did not feel that it was an important contribution to her experience in the course or to her learning. I will report what she regarded as negative and positive in the following paragraphs.

Of the five students I focused on, Ruth's posting frequency is lowest. It was approximately half of Judith's total and more in-line with Jacques's. (Recall that Jacques could only access a reliable Internet connection once a week). She told me that she posts mainly because she is required to. This admission helps to explain her pattern of posting. Her posts are concentrated in her group's public spaces, where the instructor requires the students to post; there are few posts in the other group's public spaces, where the instructor only encourages them to post. Many conferences come and go without Ruth posting to them.

In the student-moderated conferences—in which participation is also required—she posts in a consistent but limited fashion. Her participation, however, is not prompted by a recognition of its learning benefits:

> I think with those I was trying to be fair and sort of pay back the other students for their hard work by posting in each of their conferences. But it was more because I wanted it to be a good week for them rather than "Wow! Fascinating discussion!" (Ruth, Second interview)

I ask her directly what she sees as the role of the conference in the course or in what she's trying to do, and she begins:

> I have sometimes wondered. Sometimes it just seems like this thing that you have to do. I am not sure I am learning much from the conferences. I have learned from reading the books, and working on my own papers. Actually, in a lot of ways it's made it more difficult you know to do it as a group. When you have a lot of other things on the go it puts lots of stress on you (Ruth, Second interview)

At another point, I ask her about an interesting exchange that I observe in the conference. It is the type of exchange that I think might make the conference useful:

> *Liam*: Last week, in the conference that Jason was moderating, Marshall and Jacques diverged on their interpretations of Enlightenment values. Jacques felt that the values contributed to the mistreatment of native peoples when they were imported to the New World. Marshall felt that though there might be shortcomings, they were the best set of values we've had, yet. I noticed that none of the

> other students, including you, joined in the exchange of interpretations that Jacques and Marshall were having. After their exchange, the next post is from Mike who raises a new issue. I'm curious about how you "read" such an exchange of views between students and the influence that is has on your actions.
>
> *Ruth*: I have to confess I didn't really pay full attention to the views of the other students. I felt it was Jason's conference and my job was to answer one of his questions, not to respond to other people. I only had a limited amount of time last week. Maybe if someone had said something that really struck me as interesting or wrong I might have joined in. (Email correspondence, March 15, 2004)

Ultimately, Ruth says she doesn't find much of value in the conference and would prefer independent study.

Throughout the course, we continue to talk and some benefits are expressed. If others understand a difficult reading, their postings can make it intelligible for everyone; if they do not understand a reading, their posts can engender a feeling of solidarity and empathy:

> Sometimes I think that people have really clarified what a chapter has been about. Really clarified it for me. Sort of taught me something that I didn't see in it. It makes you more aware that there are other people taking this course and that they're struggling too, so we're all struggling in it together. I think that maybe its been like a window into the other people taking the course. If you were just doing it as a

> reading course you'd think there was just you. (Ruth, Second interview)

Like the other students I interview, Ruth recognizes the benefits of paced study. Although this is not peculiar to conferencing, conferencing adds an important element:

> It makes you more accountable for doing something every week. Plus, I had to work harder because I didn't want to come off looking like an absolute idiot saying something ridiculous. It is preferable to look like an idiot in front of one professor than a whole bunch of students. So maybe I've worked harder, so that's probably good for me. (Ruth, Second interview)

The biggest benefit for Ruth, however, is the opportunity for reflection—for interpreting the readings through her experience and interpreting her experience through the reading. In this way, she employs the course content to enrich her everyday experience; reciprocally, her everyday experience is employed in deciphering the course content:

> Computer conferencing allows people a chance to reflect on what they want to say. Definitely. What I usually do if I'm going to comment on somebody's post is I take a first pass and then I re-read it and write out in long hand what I want to say, and then I respond. So it definitely gives me time to reflect. (Ruth, Second interview)

In the face of these benefits, however, her assessment of conferencing ultimately is critical: "The strength of the conference then is not in helping your learning?" I ask. "No I don't think so," she answers. (Ruth, Second interview)

Judith

Background

Judith lives in central Canada and like most of the students she has a career and a family. (We schedule the first interview around her son's figure skating tournament, and the third interview, conducted during the Easter break, is paused several times by talk between her and her two boys.)

She works in the field of retail security and investigations, and her responsibilities extend to health, safety, and security concerns. After twelve years with the same company, she is bored. She wants to build on her undergraduate degree in psychology and her diploma in social work to become a councillor. "I already have a degree in psychology," she explains, "I could be a councillor right now. But I just feel that I don't have enough educational background" (Judith, Second interview). A master's degree would increase her confidence.

Because she is pregnant and her boys are young, and because she is not at liberty to quit her job, she looked at distance programs. WCU's graduate degree in counselling was the obvious choice, but it requires students to attend sessions on campus. Commenting on this, Judith explains:

> I can't afford the time or the cost. The reason I'm taking distance education is because I can't meet. I don't want to fly all the way to [City] for the weekend. I'm not a millionaire. It kind of defeats the

> purpose of saying that it's a distance ed course and there's no need to attend. Plus, I'm pregnant. (Judith, First interview)

The program she is in does not hold mandatory face-to-face sessions, and she feels that with its flexibility and it streams, she can obtain the credentials she needs.

The program is not her first distance education experience. Two of her undergraduate courses were taken through correspondence, and a third was taken online. The third included computer conferencing. Along with this program, she is taking another graduate-level course from WCU.

Conference Activity

In an email exchange, Judith explains her posting process:

> *Liam*: Some of the students tell me that they compose their postings in their heads first, then jot them down in some type of word-processing software and then post them to the conference. Others work directly in the conferencing software. Do you have a preference or a typical method?
>
> *Judith*: I compose in the conferencing software. I find this much easier and less time consuming. I am on a very tight schedule. (Judith, First interview)

She spends much more time with each of her posts than her description indicates. It is in fact just a description of the last step in a deliberate and thoughtful process:

> I go on [the conference], read all the posts, and then log off and think about the post that I want to reply to. Sometimes I'll think about a response all week, and I'll re-read some of the sections in the chapter

> and re-read the post I want to reply to. Then I'll prepare my post, check it for spelling errors, re-read it, re-write it, and then send it. The past couple of weeks I've been posting at the end of the week. Like, I haven't posted yet this week (*its Friday*) because I've been thinking about the topic all week. I've been re-reading some of the sections. I'm going to write this just for the sake of putting something in. (Judith, First interview)

All of these activities amount to a few hours a week dedicated solely to the conference:

> Usually I'll spend probably about 3-hours online, depending what the topic is and how long the posts are and how long the papers are. Depending on who's posting I might have to reread it. Probably about 3-hours but a lot of that is spent reading the conferences because I like to read and reread if they're difficult posts. And I spend about an hour per week composing my responses. (Judith, First interview)

Throughout the 15-weeks, there are some general activities that characterize Judith's posting and some are specific activities that are uniquely associated with the conferences types.

Generally, she is engaging in interpersonal interaction and engendering a warm and supportive environment. Her posts are almost always to a specific student, and they begin with a direct address, often quoting from others' messages. Further, there is no case throughout the conference in which she has not replied to someone who addressed her.

The mood of her interpersonal interaction is warm and supportive. At one point I suggest that her style is similar to that of a Rogerian therapist, and she is flattered. This is the description I presented to her:

> The therapist is non-directive and reflective and does not interpret or advise except to encourage or clarify. The best course for the therapist is to offer a non-judgmental, accepting atmosphere within which to explore and work things out.

An encouraging, non-judgmental, accepting environment is what she tries to maintain with each of her posts. Even if she doesn't have anything substantial to contribute, she makes a point of acknowledging others' posts. This style of posting is foreshadowed in the first sentence of Judith's first message in the *Introductions and Greetings* conference: "I would like to extend warm greetings to everyone" (Judith, Week one, Introductory conference).

Unfortunately, the students do not always interpret her efforts the way she intends. Marshall provides his assessment of Judith's attempts to make him feel supported:

> Some people just like to say something to make it look as if they're interested and just leave it at that. And one of the ways to do that is to ask questions. I don't think I've ever asked somebody a specific question; whereas, I notice that Judith asks questions, but she doesn't respond afterwards (laughs) to my answers. It's a simple way I think of going through the posts and participating without having to put in

> too much effort, I guess. I mean, that's my perception, but I could be wrong (Judith, Second interview).

Knowing Judith's intentions, I am not sure if we are talking about the same thing, so I send Marshall an email containing an example of a post that Judith addressed to him. In it, she writes:

> Marshall,
>
> I enjoyed your responses. The question you posed is worth thinking about. I completely agree with your statement.
>
> (Judith, Week one, Group Three's plenary conference).

Marshall likens this to his own actions when he is teaching in the K-12 setting:

> I am like that at school, mostly with students who require a lift. The response above requires no further action on the part of the person posting and shows that the other person is taking an interest. It is similar to feigning interest when someone is talking about something for long periods of time (Marshall, Email correspondence, March 19, 2004).

At first, Saul gives Judith's efforts the same reading as Marshall does:

> Something like "Great post, really enjoyed it" has no value for me. If that was a personal email, I'd send back "thank you very much, really appreciate it," but this is a conference. This is a conference for a master's program. To receive a response like that, there's no added valued for me at all. I just deem that as a waste of time and space. I look and it and say why do they even bother? (Saul, First interview)

When I interview him toward the end of the course, however, his assessment has changed:

> *Saul*: I think we're more comfortable with one another. Now, when somebody says "great paper well written I really enjoyed it" I think that they mean it.
>
> *Liam*: So the same post is interpreted differently now? Hypothetically, I could cut one of those early posts from week one or week two that didn't seem valuable at the time, and paste it into week 12's conference, and it would have a different meaning, a different significance?
>
> *Saul*: I think so, yeah. (Saul, Third interview)

Jacques also comments on Judith's participation, and he is appreciative of what she is trying to do:

> When I read the big posts that are too intellectual, I don't quite know how to respond, so I tend to say something superficial because, where are you going to go with it? There's no fuel for any discussion. Someone like Judith at least offers you opportunities for this dualogue (sic) you can get into it (*Note: Jacques plays with the term* dialogue *purposefully)*. You need people like Judith to make it a bit warmer than just abstraction. Otherwise, people just lose interest and stop posting. (Jacques, Email correspondence, April 1, 2004)

Judith interacts in a warm and supportive manner. She doesn't engage in abstract theorizing like Saul does nor does she share a lot of her personal experiences as Ruth does:

> I try not to use that much abstract. Abstract to me is good in a sense that it provides different perspectives. However, it is very difficult to understand. I like to compose a post that's straightforward that combines both facts and my interpretations of the topic. To me that's simple and structured. I'm not very good providing abstract ideas either. Saul is good at that so I guess that's his thing. But I'm not, that's not me at all. Ruth's very specific—"This applies to this." In a sense, if I find that something does relate to my life, I guess depending on how comfortable I am talking about the topic, and how comfortable I would be making reference to my personal life then I would mention that. (Judith, Email correspondence, March 20, 2004)

Nor does Judith engage in the type of informal argumentation that Marshall does. She may have considered this, though. In her introductory posts, she makes the following offer: "Please feel free to critique my discussions throughout the year as I find this to be an invaluable learning experience." Despite this invitation, I do not observe Judith critiquing others' discussions, so I attempt to confirm that this is her understanding. I read out something that summarizes my view, and ask her to comment. It is from Brookfield and Preskill (1999):

> One of the most daunting and difficult (but essential) tasks of the facilitator is to assist in the development of a culture in which adults can challenge one another and can feel comfortable being challenged. Without this, teaching-learning encounters run the risk of becoming

> nothing more than exchanges of entrenched opinion and prejudice, with no element of challenge or willingness to probe the assumptions underlying beliefs, behaviours, or values. What is valuable is the honest expression of differences in an atmosphere where challenge and dissension are accepted as part of the educational process. (p. 64)

Judith is quick to agree:

> Oh definitely. I find that 100 percent true because if you don't have the challenge process there, then what are you actually doing? You're actually just stating your opinion and you're not really learning from it. The challenge has to be there in order to learn properly and to learn new things (Judith, Third interview)

Her assent returns us to the dearth of critique in her postings. I report to her that I have just finished reading all of her messages as a set, and within her 97 messages I have only found three instances of her disagreeing with someone. I read these exchanges aloud. The first instance occurs in week seven in a conference that Judith is hosting. She and another student, Ruth, are exchanging views on literal interpretations of the bible. Judith remarks on the Church's advocacy of supernatural phenomena during the Enlightenment, the so-called Age of Reason. Ruth offers a correction, noting that the Church reinterpreted scripture during the Enlightenment in a way that was consistent with the empirical method. Judith disagrees. She notes that in the face of reason and empiricism, the Church became even more adamant about its mystical interpretation of events. Ruth does not respond. "See," Judith begins:

> Sometimes when I critique a person's work, they take offence. They don't always see it as *constructive* criticism. They think there's a problem with their writing or their facts. That's not the case though. The case is, I'm adding information, and I'm asking the other person to provide more information in order to shore-up their argument and make it plausible. If they do that, they will learn. (Judith, Third interview)

Perhaps this is why Brookfield and Preskill (1999) stress the development of a climate or culture in which disagreement is accepted.

As I read out the second example to Judith, she explores another value that must be present for this type of exchange to work. In this instance, she engages in an extended series of moves with Saul. Judith comments on the oppression of women in the Middle Ages. Saul proposes two interpretations; one, that this was an artefact of Medieval society, and two, that women probably did not perceive this. Judith argues that they must have, and that an individual's experience transcends culture. Saul concludes their exchange by restating his original position, but he phrases it as an agreement with Judith's position, which, clearly, it is not. Judith comments:

> In order to learn online in a conference you need to be able to see other peoples' point of view. You need to view other's opinions not as your own but as an acceptable form of argumentation. If you don't you're not going to learn a whole heck of a lot. If I were very one-sided then I wouldn't be learning anything. Its not that the answers are right or

> wrong; a lot of them are opinionated but the opinions are provided within a valid argument that contains facts. (Judith, First interview)

After I read out the third and final instance of Judith's disagreement, she identifies another problem. The exchange is brief, and it can be understood with minimal context, so I will present it here. It begins with Judith posting a question about the Middle Ages. Another student proposes an answer, to which Judith, politely and tentatively, provides an alternative:

> Hi All,
>
> What factors prevented Islam from becoming the dominant religion and what early influence did Islam have on Western Europe?
>
> Judith
>
> Hi Judith
>
> In the absence of military conquest there could be no mass religious conversion. I feel secure in arguing that without military conquest, there was no conversion and therefore Christianity remained the continental religion of Europe.
>
> [*student*]
>
> Hello [*student*],
>
> Just a thought, but I think from the readings, people will establish and implement a religion that benefits them as a whole. Christianity seemed to have provided the benefits and security people desired;

> therefore, with or without military roles, personal desire and social acceptance seemed to be the foremost desire.(Judith, Week one, Group Three's plenary conference)

Student does not respond. "That's the problem," Judith explains:

> People just ignore it. It's a problem with conferencing as opposed to face-to-face. If you're face-to-face you're going to get a direct response. Regardless of whether you agree or disagree with someone, if you're conferencing people can just say "okay, b-bye. I'm not going back online." (Judith, Third interview)

These episodes focus our discussion on the change in Judith's activity from occasional expressions of disagreement with others at the beginning to solely expressions of agreement after the first few weeks.

Aside from her general style of interactive, warm, and supportive posting, Judith's engages in activities that are specific to each of the four types of conferences.

Observing the *working space conferences*, I see Judith doing three things: 1) coordinating group activity, 2) collaborating on the group assignments, and 3) engendering a warm and supportive environment.

Coordinating group activity consists of determining who will do what and what she will or is doing. A couple of examples are illustrative:

> Marshall,
>
> Great questions! I am still going through the readings but will post my questions very shortly. I am highlighting the main points. Are we each

> supposed to post two questions? Or two per group? (Judith, Week one, Group Two's working space conference)
>
> Hi Guys,
>
> Jacques, that sounds fine. I am unsure what question I will tackle but will decide within the hour. [*Group member*] has #4, you have #2, so I will proceed with one of the others'. I will post my answer and thoughts to the question I am going to tackle, tonight. Talk to you soon. (Judith, Week one, Group Two's working space conference)

A second type of post is working on the project collaboratively, as in the following message:

> Hello guys,
>
> Here is a question for thought. During the eight and ninth centuries, the transformation of many Christians to Islam was considered to be devastating. Why was this devastation perceived as having a profound impact on Christianity? (Judith, Week two, Group Two's working space conference)

During my original reading of the conferences, I had noticed the coordination of tasks, but I hadn't noticed the collaboration, so I challenged Judith's account. She was adamant: "If you look at our working groups, I'm sure there was collaboration there. I'm sure there was." (Judith, First interview)

Like all sections of the conference, the working space is also a place for engendering a warm and supportive environment. This is accomplished through self-disclosure, compliments, and expressions of appreciation, as in the following:

> Sorry for the delay. I had a virus and just cleared it up. I have never done one before so please be patient with me. I am open for any suggestions. (Judith, Week four, Group Two's working space conference)

> Marshall and [*student*],
>
> I will post my questions tomorrow (Tuesday). I re-read chapter #6, so that took a little extra time. I am finding Chapter 7 confusing so any insight would definitely assist me. (Judith, Week three, Group Two's working space conference)

Judith however does not use self-disclosure instrumentally. It is just her being herself:

> I don't like to portray myself as something that I'm not regardless of whether I'm face-to-face or conferencing. If I'm having trouble with the readings, I'll let them know. If I'm having trouble with something I'll just say so, its not a strategy for creating a warm climate. I was struggling with this, and its important that the others know that my answer was composed not out of knowledge of the topic area but what my interpretation was of the reading. Some of the learnings (sic) have to be difficult for some people, so if I present that and someone else presents that then that's good because that's allowing them as well to show the class, "Wait a second I'm not an expert in the subject, so please help me" (Judith, Second interview)

Her account of her activity in the working spaces is consistent with mine:

> The group members and I emailed one another to find out what we were going to do, and who was going to do what. Someone would ask, "What do you think of this?" I'd respond, and then I would do the same thing. When we felt we had it right, we would put it all together and then post it to the public conference. In the working groups we decided which part each of us would to do, then do our part, and then begin sharing our provisional work with each other (Judith, First interview)

Judith has a different style of posting in the plenary or whole-group conferences. In these conferences, her activity consists of two distinct things, formal answers to the week's assignment and responses to others' posts. The formal answers are expository; they are not addressed and sometimes they are not signed. They are reports of facts relating to the answer. The following example is long, but it is illustrative. In it she answers two questions, What kept Islam from becoming the dominant religion? and What were the consequence of the transformation of Christians to Islam?

> Question #1.
>
> Islam only spread as far as the Iberian Peninsula, around the Mediterranean. Islam had strict rules such as no drinking, smoking or drugs and to enjoy life to the fullest, one had to die faithful to Allah. Other citizens did not want to abstain from life's enjoyment. Under Islamic law, the whole helps the individual that are Islamic and need

help. The Islamic saw potential by giving money to poor Muslims and allowing themselves to become wealthy from those who were not Islamic. The Islamic felt they would benefit if there less Muslims than other religions. They wanted territory and trade, yet did not necessarily want converts but conquest. They carried on trade with Western Europe and had trade routes to Ireland. The religion only grew by the territory they took, as well they did not influence many to become Islamic. There proceedings hindered the faith yet was of their own doing.

Question #2.

The long-term consequences was the fact that Northern Europe tried to block off all connections with Islamic Nations. The Christians ended up in conflict with the Islamic. The Pope saw it as a threat by losing the amount of people that joined the congregation. Cantor, pg.135, explains how the devastation was not as destructive as the Christians thought. The Christians were concerned about losing their place of worship yet many were eager to accept the Islamic faith. Cantor explains the collapse of many churches that occurred before the conversion. The devastation that was thought to be, could be solely a misconception. (Judith, Week two, Group Two' plenary conference)

The responses conversely are addressed to specific individuals, nested in compliments and expressions of agreement, and often contain little course content—

unlike the answers, which contain all content. There are more than twice as many *responses* as *answers*. The following replies to Marshall and Michael are typical:

> Marshall,
>
> I enjoyed your responses. The question you posed at the end of paragraph two is worth thinking about; "If a religion or idea comes along that permits people to live and thrive, why fight?" I completely agree with your statement. Many were and are quite content knowing they are alive and well without the added pressures of religion and beliefs. (Judith, Week one, Group Three's plenary conference)
>
> [*Student*],
>
> I was going to answer this question but I think you have done a fabulous job summing it up. I cannot add anything that would not be repetitive. Great job! (Judith, Week three, Group Two's plenary conference)

The contrast between these and the answers is marked.

The final conference type is the *student-moderated conferences* which occur from weeks seven to fifteen. Two types of activity are discernable in these: posts in which she provides an answers to the moderators' formal questions, and subsequent posts in which she compliments someone and rephrases their message.

Her answers to the moderators' questions are formulaic. The formula has seven elements, and in no instance are there more than two of the elements missing. The elements are 1) direct address, 2) compliment, 3) quoting the question, 4) her answer, 5) quotations from reference material, 6) a question for the moderator, and 7) closing salutation. When I bring this template up with Judith, she replies:

> To me its normal to write salutations, its more, providing feedback to someone's post before you provide an answer allows them to see how I interpreted their post, and then I add in what I want to say. That way I'm not overpowering their post, by writing, like I think my ideas are better than yours; therefore, I'll write mine first and comment on yours later. Ya know? To me it's a very organized format, its more polite, and its more respectful. Because they're the ones running the conference, therefore, I'm sure they want to know how they're doing. And commenting on their post or on their written work is very important, I think. And my response to their post isn't as important. That's why I do it that way. (Judith, Third interview)

The following two posts illustrates the template:

> Michael,
>
> Excellent paper. I will answer question #2.
>
> "Given the emphasis on critical thinking in our course, do you consider deconstruction as a positive tool for critical thinking?"
>
> I consider deconstruction as a necessary means of critical thinking. Structuralism assists with guided organized concepts that allows focus. Deconstruction allows individuals to "critically" analyze an oppositional form of the structuralist concept. Oppositional thought sounds detrimental to society's way of thinking yet, oppositional

thinking can form "new" and "unbiased" concepts other than from a structuralist point of view.

What are your thoughts without reference to Bonnycastle, of deconstruction and postmodernism? (Judith, Week 12, student-moderated conference)

Ruth,

"Bonnycastle gives as an example of metonymy (page 108): "a product is made to seem attractive because an attractive person is using it". What examples of metonymy can be seen in politics and advertising in today's world?"

Your paper was very influential and realistic, relating to the modern world. I will attempt to answer question #1.

Metonymy can be seen in many media events such as newspapers, television and magazines. Newspapers produce individuals of what society dictates as the "perfect" body for health club advertisements. Magazines and billboards produce the same effect for items such as clothing. Unfortunately, the media and today's society allows metonymous concepts to increase production and profits within Canada and many other countries. Metonymy increases the development of eating disorders around the globe by solely producing "beautiful women" who are mistaken as the image of our culture.

> Metonymy presents a false realization of success that actually decreases our cultures modern influences.
>
> I would enjoy hearing your interpretation of the above question. Do you feel that Metonymy hinders a cultures development? (Judith, Week 12, student-moderated conference)

Judith adheres strictly to this formula. She explains:

> That's an organized format for me. That's a lot easier for me, and it keeps me on track. If I post that way to most of them it's a very quick way to post, its very predictable, like people can predict obviously how I'm going to post. (Judith, Second interview)

The students are energetic moderators, and Judith often receives a reply to her answers. This provokes a second type of post, which appears to have two essential characteristics—compliments and rephrasings of the response that she has received. These responses to Jacques and Jason are emblematic:

> Jacques,
>
> I enjoyed your post. I especially liked how you provided a comparison of Artwork and Literature as follows: "Similarly, the artworks of Picasso, Klee and Dali cannot be tarnished or intellectually compartmentalized very easily today..." (Judith, Week 10, student-moderated conference)

> Jason

> I enjoyed reading your response to the post. I find it interesting that the Inuit possess seven different terms for snow. I believe that is what you stated. Visiting many different countries must have been absolutely fabulous, did your worldview of literature change as a result of your traveling and experiencing many different cultures first hand? (Judith, Week 10, student-moderated conference)

The template for this type of post is less rigid than for the previous type making these posts seem more extemporaneous. They can give one the mistaken sense that she is the facilitator of the conference.

Learning through computer conferencing

Judith articulates a sophisticated account of the role that conferencing plays in her learning. Her understanding of learning includes three things—getting new information, having misconceptions corrected, and adopting new perspectives.

Two processes contribute to these outcomes, composing messages and reading others. For Judith, composing posts is not an extemporaneous process. As I described it earlier, she deliberates on a response for several days sometimes, and it is evident from her responses that she researches her answers. Often, they contain quotations and references to sources external to the course readings.

Aside from the deliberation and research, the act of externalizing her thinking helps:

> I'll write my response out, check it for spelling errors, re-read it, and if something doesn't make sense, I'll change it. It could be mixed up—you kind of mix things up when you post, and after its actually written

> down, I re-read it and I'll be like, "Oh wait a second, that line just doesn't make sense. So then I'll re-write it. (Judith, Second interview)

Externalizing her thoughts prompts her to evaluate them. It is not just composing; it is composing with the understanding that an audience is going to read her messages:

> Knowing that they're going to read it definitely enhances my thinking skills. For sure. Because I have to think about it, right? You have to make sure your interpretation isn't misinformed. Yeah, you actually have to post it in an organized fashion; if not, people are not going to understand. I did that once to Marshall—I was on midnights actually—and I posted a question to him and he sent me an email back saying "Um, I don't really understand this. And I'm like "I'm sorry, I posted it at 3 o'clock the morning, I was at work until midnight, and I was very tired." Anyway, in the morning I rewrote the question and sent it to him and he's like, oh that's better. (Judith, Email correspondence, March 17, 2004)

Like Ruth, who is concerned not to look like a "complete idiot," (Ruth, Second interview) Judith takes extra time composing a public post.

Reading others' messages, the complimentary process to composing hers, is also helpful. Judith places equal stress on the benefits of reading others' posts.

> When I post, I've already looked up the information, I've already looked up the references, I've already researched my answer, I've already learned as much as I can learn from the composing. Whereas reading the others' posts provides me with a new perspective. Because,

> when I compose a post its one-sided—my side. If I can get something that's more than one-sided then that's great. When you add my side in and everyone else's it kind of makes up a whole, right? Like one time I had posted something and then Saul had posted a response and he provided information that I would never have thought of. Saul provides facts and his opinion in his posts which I take all into consideration, and when somebody posts to a question you've asked, I mean obviously if you're open-minded, your perspective has to change a little bit. You have to take all of it into consideration, unless you're like a genius or something and you know everything. Obviously there's going to be information that one has not thought of. (Judith, Third interview)

Marshall

Background

My first interview with Marshall began with a description of how he came to be in the course. Pausing occasionally to check on the bread he was baking and to talk to his son, he told me about his prior education and work experiences.

Marshall graduated with a B.A in Political Science almost twenty years ago. He was 51 years old at the time of our interview. In the intervening years, he built a successful business then saw it wrested away by fraudulent employees.

Casting around for what do next, something told Marshall to go back to school. "I could've gone into law," he said, "I could've got a Master's in political science, or I could've gone into a MBA" (Marshall, First interview). But after doing a cost-benefit analysis, he elected to do an after-degree in education.

He is happy with the decision. Studying reawakened something that had lain dormant during the years in business. He did well, and he developed good relationships with his professors. He completed the degree a year ago, and had been subbing almost full time since.

The after-degree reinvigorated Marshall's desire to learn, and because he "is too old to get another undergrad degree," he began researching Master's programs (Marshall, First interview). His colleagues have told him that this is the route to an administrative position—of which there will be many during the next few years.

Of the Master's programs in education, many require more years of teaching experience than Marshall has. Others are too specific. The program at WCU, on the other hand, does not enforce the same prerequisites, and it is eclectic and it will allow him to concentrate on educational topics while exploring other peripheral topics. The fact that it is offered entirely at a distance is convenient and it means that he, his wife, and his school-aged son won't have to relocate.

Conference participation

Much of Marshall's activity in the conferences can be characterized as informal argumentation—claims nested in reasons. Marshall presents one or more claims related to an issue under discussion along with some grounds for his claims. The evidence he provides includes personal experience, references to the current reading or to external reference materials, and chains of reasoning. In week 8, for instance, he responds to the student moderator's question about vocational aptitude in an educational context. He begins by quoting the question:

> "Do you think more rigorous screening for the basic 'soft skills' (i.e. communication, empathy, sense of humour, patience, etc) up front would be fair and also effective?"
>
> Screening for particular "desirable" traits could lead us into another paternalistic system whereby someone or some group designs the criteria. Also, I am not sure that many applicants in the typical age range of 18 to 22 would qualify as "empathic, etc." I have seen individuals who did have "people skills" in their younger years but have, with some negative experiences with teaching, become pretty disparaging of their students. I have also seen the reverse scenario. Statistics from [my province's] Teacher's Association indicate that about 50% of graduating teachers are not teaching five years after graduation. Some fail to find employment, while others become completely disillusioned about the system, their colleagues, or the students. I am not sure that screening to keep people out of the profession would work, but perhaps intensive counselling about a particular career path would be positive. (Marshall, Week eight, student-moderated conference)

The purpose of his arguments is twofold. First, they help him think through the complex issues that arise in the course and to clarify his understanding. Second, he conveys this understanding and tries to persuade others or at least provide some resistance to alternative understandings. Composing in the argument form deepens and complicates Marshall's understanding. It is a process of enlightenment and clarification: He explains:

> There is a value to posting messages that I have recently come to appreciate. Although I am posting to the conferencing, I am the intended audience. A post might not be valuable to others, but it assists me, the writer. Sometimes I compose a response to another's message and then not post what I have written. For me, it may serve to get my thinking in order, or I might re-evaluate my thought processes by the act of writing. I have had very few revelations from the postings from other people; I have had inspirations while I was writing, though. This is not to devalue the process in any way. It forces me to make responses and initiate dialogue which helps my thinking. (Marshall, Email correspondence, March 30, 2004)

The benefits of computer conferencing begin to accrue for Marshall even before he posts.

They continue once his compositions are available to others. Many of his posts address contentious issues, and they trigger responses that challenge his claims. Sometimes the exchanges originate with Marshall. Other times, he challenges others' interpretations. One of the students asserted that human nature is inherently bad and society is a corrective. Marshall argued that human beings are inherently good and society is corruptive. One student's views about public service unions elicited a rebuttal from Marshall:

> [*Student*], one thing that you mentioned surprised me, and that was concerning teacher's unions. You state, "Here in my province they have become extremely powerful to the point where they have created a lowest common denominator for teachers whereby a new crackerjack with lots of new ideas and energy quickly gets told to tow the party line." The people involved in the teacher's union out here are progressive on all counts. They encourage professional development and innovation. Our government is content to control the purse-strings while the school infrastructures crumble and classroom sizes increase to unmanageable levels. The teachers' union consistently battles against an increasingly intransigent government. (Marshall, Week eight, Saul's conference)

In another conference, one of the students questioned Enlightenment values and its colonial tendencies. Marshall cautioned against a wholesale dismissal:

> Although I see the many wrongs that exist in Western society, I am, at the same time reluctant to criticize the ideals of the Enlightenment. I would much prefer to live now rather than in any other period of western history. Although there may be, for example, social penalties such as lack of job promotion, not many westerners suffer persecution or death for beliefs that are contrary to those of mainstream society. I will not burn at the stake for a belief in witchcraft, Gnosticism, or a sexual orientation different than the norm, unlike many in the medieval era. However, I may not receive a job or promotion and

> could suffer some personal harassment in the community. It would be nice if there were no problems in the world, but I believe that it is only through adversity that progress is made, both on a personal and societal level. (Marshall, Week 13, student-moderated conference)

This is not pointless gainsaying. Marshall's positions are consistent and coherent throughout the course. Convinced of the rightness of his claim, he attempts to sway others, or at least to provide some resistance to their positions.

After reading all of his messages as a set and speaking with him, I see that Marshall's participation is dominated by informal argumentation. However, throughout the 15 weeks across the various types of conferences Marshall engages in other types of activity. In the following paragraphs, I will describe his activity in his group's working space conferences, the two conferences he hosts, and the whole-group conferences.

During the five working space conferences, which occur in the first weeks of the course, Marshall posts nineteen times. His messages can be divided into two categories: *coordinating group activity* and *accomplishing the weekly assignment.* Coordinating group activity includes distributing tasks, creating a timeline, and building consensus. The following message embodies each of these:

> Hi People,
>
> We now have six or seven questions put forward. Can we fix a time for closing the submission of new ones? I would suggest the end of today, Thursday. I also suggest that we number all of the questions and vote on each one in a preferential ballot by Friday, tabulate the votes

> later in the day, and submit our final two questions by.Friday evening. What do you think? (Marshall, Week two, Group Two's working space conference)

The other activity characteristic of the working space conferences is *accomplishing the assignment,* which refers to the activity of creating the weekly product. For instance, if the group's task is to construct two questions, then composing a question counts as accomplishing the assignment. In four of the five working space conferences, Marshall is the first to post, often on the same day or the day after the assignment arrives, with a version of the assignment that is ready for submission. His post that opens the week two working space is an example. It arrives a day after the instructor presented their assignment, which was to read four chapters of the Cantor text, and to prepare two questions for discussion stemming from the readings:

> Hi People,
>
> From what I gather, and please correct me if I am wrong, we are supposed to post two questions pertaining to our readings on the Moslem world by Friday. My understanding is that we only post the questions, not our answers.
>
> My initial thoughts are the following questions:
>
> 1. What factors prevented Islam from becoming the dominant religion in Western Europe?
> 2. What were the theological differences between orthodox Christianity and orthodox Islam?

> 3. What tensions existed between orthodox Christianity and orthodox Islam?
>
> 4. Why were the Jews so intricately involved within the Islamic world?
>
> 5. What early influence did Islam have upon the future development of Western Europe?
>
> That's all that I can think of for now.
>
> Cheers (Marshall, Week two, Group Two's working space conference)

Two factors account for this activity—his desire to present a high quality assignment, and the circumstances of his job. Marshall's commitment to quality is obvious to the other students, who compliment his work enthusiastically. The instructor too, who rarely posts in the conferences, posts most often in response to Marshall's contributions. Marshall's assessment of his relative worth is consistent with these:

> I received [another member's] stuff the day before the assignment was due, and it was terrible. It was awful. There's no way in the world that it would weave into mine. I ended up writing the entire thing. I sent my version back and said, "Here's what I've got." I didn't say, "I didn't take any of your stuff," I said "Here. Here's the way it lays. Let me know if it's okay." The member wrote back, "Looks good to me" so I posted it. But it was 100% mine. I would much rather do the whole thing myself and submit it under the group name (after the group approved it) and not complain about the other people not doing

> any work. In every group, there's always one bright go-getter that does all the work. (Marshall, First interview)

In the early weeks of the course, before he has any reasons to believe otherwise, Marshall assumes this role.

The efficiency and independence that characterize Marshall's activity in the working space conference make sense when his commitment to excellence is regarded through the circumstances of his job. First, his schedule is not quite fulltime, and it is irregular. This has two implications. Because he is not sure when he will be called in to work or how long a job may last, Marshall is eager to complete assignments while he can. His group members and I get some sense of these factors in his following post:

> I am open for suggestions, having just got home from a day of work followed by [professional association] meetings. And on Thursday and Friday, we have our convention, so I will be pretty busy. I feel fairly comfortable taking any of the 3 aspects of the [assignment] and doing peer review and editing afterwards, so I leave it to you two to make the decisions, unless you can wait until Saturday morning, at which time I can be a full participant. (Marshall, Week four, Group Two's working space conference)

The beneficial side of irregular employment is that it leaves Marshall with blocks of time to concentrate on the course. Importantly, it provides him with more time than his other group members, both of who work fulltime, (and, depending on who is currently in his group, have young children, are pregnant, are taking multiple courses, or battling unreliable Internet service). This positions Marshall ahead of his group members. For instance, while working on an assignment, Marshall is usually on his second, sometimes third reading of the material while the others are encountering if for the first time. In one of the group's conferences, two members are commiserating about the length and density of the readings; Marshall mentions in passing that he worked through the same text four months ago when the course package arrived.

Putting Marshall further ahead of his group members is the fact that his vocation is related to the material they are studying. Much of the content is familiar to him, unlike at least one other group member who is distressed by her inability to make sense of the readings.

Two qualities stand out in Marshall's working space activity, his efficiency and his independence. He cares about the quality of his work; perhaps more so that developing relationships or learning collaboratively, and he cannot predict how much time he will be able to devote to the group project. His activity reflects these circumstances.

Marshall's activity in the plenary conferences is distinct from his activity in the working space conferences. Weeks one through four each include a plenary conference in which the groups post their weekly assignments, and the members are required to read all of the posts and respond to those that interest them.

Marshall posts thirteen times to these conferences. In three of the four conferences he posts twice. The first post is always his response to the weekly assignment. These are succinct and expository answers to the assignments, in which Marshall, like the others, locates the relevant sections of the readings and restates them in his own words. Towards the end of this activity, some interpretative and aesthetic concerns appear in Marshall's answers: In week three, he questions the author's construction of historical events, in week four, he begins his answer with a segment of a poem.

Though the form and function of the first of his two weekly posts are consistent, there is no pattern to the second. Once, he replies to a student who comments on his answer, another time he adds some evidence to his answer. A third time, he comments on an issue in the reading that to him seems internally inconsistent.

Parallel to their own plenary conferences are those of the other three group's. The students are not required to post to these, but the instructor encourages them to do so in order to get the most out of the course. Because each group has one over a course of four weeks, there are a total of twelve. Four are Marshall's own reducing the total from his perspective to eight. He posts to three, one post per conference. Two of the three posts are similar to the answers he provides in his own plenary conferences—succinct, factual answers to a question. The third is a response to something another student has posted. It has dialogical elements, picking up on issues the previous student raised, and treating them centrally.

Equally distinct from his participation in the working space and plenary conferences is Marshall's participation in the student-moderated conferences. In week 7, the students begin moderating conferences. The instructor asks them to write a 250-500-word reaction to one of the readings, they submit this, he corrects it, and then they post it to the conference and host a seven-day conference. Each student does this twice. Three-or-four occur simultaneously during the week. Because the class is small, there are not enough students to moderate a conference on each of the readings. Therefore, the instructor brings out reaction papers from previous years, posts them, and the students are encouraged to post. There are a total of 22 conferences from week 7 to week 14.

During these seven weeks, Marshall posts 44 times. He posts 17 times in the two conferences that he hosts. He posts 23 times in the conferences that the other students moderate. There are 14 student-moderated conferences, he posts to 9. He posts twice in the unmoderated conferences, posting to two of the nine conferences. In other words, he posts to 100% of the conferences he hosts, 64% of the conferences hosted by others, and 22% of the unhosted conferences. Or, 92% of his posts are directed toward the student-moderated conferences.

Marshall hosts two conferences, one in week 11 and one in week 13. He selects chapters from their text on literary criticism for both weeks. His reaction papers receive many compliments: "Very good paper, Marshall," (Student, Week 11, Marshall's conference) "a well-written and thought-out paper;" (Student, Week 11, Marshall's conference), "I found your paper to be well-planned and well-written, something you have demonstrated throughout this course" (Saul, Week 11, Marshall's conference) "Marshall, I enjoyed your paper, you produced a very thought provoking paper;" (Judith, Week 13, Marshall's conference) "Excellent paper! I found it to be very well written and quite interesting" (Student, Week 13, Marshall's conference).

Aside from the reaction papers, Marshall's activity in the conferences he hosts consist of replies to the students who respond to his reaction paper. These replies are of two types. Some are discursive explorations of issues that students have raised in their responses. These are exemplified in a series of exchanges between Marshall and Jacques. Marshall's reaction paper concludes with the question about whether the sciences perpetuate social values. Jacques gives a considered reply that proposes a definition and provisional list of "social values," presents some examples that affirm Marshall's question, and touches on medical advances. Marshall responds:

> Jacques,
>
> Can you imagine the social repercussions of genetic research that results in the long-sought fountain of youth? What would happen if the therapy was developed to increase human life to 150 or 200 years, but it cost hundreds of thousands of dollars for each person wanting the enhancements? Who would benefit? Would artists or writers be given free treatments? How about scientists, teachers, or skilled trades people? Or, would those with the money be the only ones to benefit? (Marshall, Week 11, Marshall's conference)

Like this one, Marshall's exploratory responses are often centrifugal, sometimes following a path that is responsive to previous post but that leads away from the thesis of his reaction paper.

The second type of response is informal argumentation, either expressive or persuasive. In expressive argumentation, Marshall presents a claim supported by grounds. Apropos for argumentation, the task is discovery and clarification of his opinion. Marshall's reply to Judith's post in which she questions the effects of communication technologies is an example:

> Judith,
>
> I see the Internet use as having both positive and negative social consequences, like most technological changes. What you point to is certainly true; there can be less socialization among individuals who are heavy Internet users. However, there are some people who can be quite isolated from people already. These include less mobile individuals, people in isolated communities, sick people, and those who have relatives and friends in distant areas. For these people, the Internet brings them closer to their community rather than further apart. Even our small group is benefiting from the technology. There are a number of people in all societies who prefer isolation. We read about the ascetics in Cantor who, for spiritual reasons, stayed away from their fellows. If not the Internet, perhaps another method of retreat, perhaps a cabin in the woods, or a deserted island. It's something to think about. (Marshall, Week 11, Marshall's conference)

The other type of argumentation reply is persuasive argumentation. These contain similar elements to expressive argumentation, but the contain a counter claim to a previous message. Saul's post prompts such a reply:

> Saul
>
> Thank you for your post. I would like you to consider just one area of science that has not been very objective and that has helped to

> perpetuate particular ways of thinking. Actually, it may have been that society influenced the thinking of scientists and that has to do with measures of intelligence comparing classes of people and different races. Scientific studies in the nineteenth century "proved" that people of lower social standing were lesser beings than upper class people. Consider the perpetuation of this ideology in literature with the orphan Oliver Twist, for example, despite being raised like an animal, having good manners and excellent speech. It seems that Oliver came from "good" breeding and was able to consequently overcome the deficits in his environment. In the twentieth century, Nazi scientists "proved" the inferiority of marginalized groups in Europe. In recent decades we have seen Arthur Jensen with his studies showing that African-Americans are inferior to Europeans. There are many other examples where science is influenced, and influences in return the thinking of society, and "research" is conducted to "prove" what is being looked at. (Marshall, Week 11, Marshall's conference)

Marshall doesn't lead the students through a discussion in the sense that Dillon (1996) would define discussion as a group of people talking back and forth with one another about a problem, or sharing interpretations that are evaluated for their ability to solve the problem. In the conferences that Marshall hosts, discussion is open-ended and his responses to others' messages are conversational—he picks up extemporaneously on issue they have raised.

Learning through computer conferencing

Marshall is articulate about the role of the conference in his learning, the forms of conferencing that are most useful, and the specific activities that are beneficial to him. In the following paragraphs, he comments on the value of mediated group work, dialogue, and composition. He begins with a definition of learning.

Marshall's understanding of learning is phenomenological. Whenever I ask him about the relationship between the conference and his learning, he talks about things like ah ha moments—"those moments when something has clicked that I didn't know and another piece in the big puzzle has come into place" (Marshall, Second interview). He also talks about inspiration—"I guess I'm a little different than some people. A lot of things that come to me come from within rather than from external sources. I synthesize things and I come out with — bang — inspirations" (Marshall, Second interview). It is these types of experiences that Marshall has in mind when he evaluates the various conferencing activities.

Throughout our interviews and emails, which span the duration of the course, Marshall consistently identifies one conference activity that contributes to his learning—composing posts. Early on he tells me:

> There is a value to posting that I have recently come to appreciate, and this has to do with writing to myself as an audience. Others might not always see the value of a posting, but it still assists the writer. On a couple of occasions, I began responding to others but then I didn't post what I had written. For me, it serves to get my thinking in order. The act of writing prompts me to re-evaluate my thought processes.

> Perhaps others do the same. (Marshall, Email correspondence, March 19, 2004)

During the second interview, he reasserts this notion:

> You and I have discussed before the real value of these conferences. Preparing a posting helps me put my thoughts together. I'm sure it's the same for others. Even if their messages aren't valuable to me, they're probably valuable to them. (Marshall, Second interview)

In an email too he expounds on this theme:

> I have had very few revelations from the postings from other people. I have had inspirations while I was writing, though. This is not to devalue the process in any way. It forces me to make responses and initiate dialogue which helps my thinking. (Marshall, Email correspondence, March 30, 2004)

This understanding of the role of conferences in learning is consistent with his notion of knowledge as coming from within. It is also consistent with the style of writing that dominates his posting—expressive and persuasive argumentation—(described in the previous section). This type of writing lends itself to discovery, sense making, and clarification.

It is also consistent with Marshall's general orientation toward the course; he is independent. In response to my prompt, "Take me through a typical day," Marshall describes a set of individual activities—reading and re-reading an essay.

> Last night I finished re-reading the Foucault article for the second time. Basically what I did the first time is I put a few ticks beside areas

> that I thought were interesting. The second time I really got into it in a lot more depth. I got up this morning and I went through the areas that I had circled and underlined and my margin notes, and when you phoned I was just starting to put together my essay on the Foucault reading. (Marshall, First interview)

Marshall concludes this description with a statement that punctuates his isolation:

> I guess that's one of the other problems: I'm not even sure if I'm pronouncing *Foucault* ("foe-callt") correctly because I've never heard of him before and I've had no verbal interaction with anybody (laughs). (Marshall, First interview)

When we return to the *typical day* description, Marshall concludes again with a poignant statement:

> When I'm not working I will spend a good five or six hours in the day reading, going as far as I can, rereading, jotting down notes, and putting together questions that I need to have answered. And responding to the things online. (Marshall, First interview)

As an afterthought, in the most tangential manner, Marshall mentions a form of interaction with the others. I sense this motif as we talk and ask him about it:

> I guess when it comes down to it I am more of an individualist type of person. I enjoy the group process and I enjoy cooperation but realistically, sometimes it just doesn't work. I guess what I'm saying is I'm a socialist but at the same time, that's utopia. (Marshall, First interview)

In response to the same *typical day* prompt, other students' have reported exclusively on group work, and they have framed all references to individual activity in the context of group work—they do readings that have been assigned to their group, for instance, or they are composing their section of their group's essay. Marshall does the opposite—group work is reframed as individual activity:

> A couple of weeks ago, my other group member and I had to do a practice reflective analysis. It was on, uh, what did I write about? I think I did it on something about Muslim – Christian interaction.
>
> (Marshall, First interview)

Marshall's assessment of collaboration and peer interaction arises again when we talk about the grouped and independent study options offered at WSU. A subtle but important confusion arises between Marshall and I between the terms *paced* and *grouped*:

> *Liam*: So you're learning more than if it was independent study?
>
> *Marshall*. I'm not saying I am learning more than if it was independent, I'm saying I'm learning. The benefit is the scheduling. When you have forced deadlines, you have to do it. With forced deadlines, practically anybody can make it. I'm not talking about the groups that we've been divided into; I'm talking about the grouped courses. I think the working groups are just sort of secondary to the process. I think very much we're all individual students trying to work within the guidelines that we're given, but we're motivated enough to

> get them done, not necessarily for the group but for the individual.
>
> (Marshall, First interview)

What initially sounds like a positive evaluation of group work turns out to be a positive evaluation of paced courses.

> *Liam*: What would the ideal situation be for you?
>
> *Marshall*: Independent study with group participation, but not so much "you work with group 1, you with group 2," etcetera. I would open up the groups. I don't particularly find too much value in collaborating on papers. The putting together of questions was interesting. I think that's what group work is designed for. Group work putting together a paper is difficult. It's not too bad when you're dealing with two people. The problems magnify the more people you have in it. So if you're dealing with say 3 people that are supposed to collaborate on a short paper of say a thousands words, man (laughs). I just don't think it's of value. Its even worse with this latest assignment which is only 250 –500 words, and I'm looking at other people's working groups, and they're saying what are we going to do, each write a hundred words and paste it together? (Laughs) I would much rather write the whole thing myself, submit it under the group name, after the group approved it and let it be and not complain about the other people not doing any work. In every group, there's always one bright go-getter that does all the work, and the other kids just sort of sit back and they don't do anything.
>
> (Marshall, First interview)

Marshall likes the scheduling of paced courses because it helps keep him on track and ensure his timely completion of the assignments and ultimately the course.

Perhaps for this reason, or perhaps because his sincere initial efforts to make the best of group work were unsuccessful, interaction with members is minimal:

> The process was supposed to work where there were three people in each group working collaboratively. [A member] dropped out—we found that out on Saturday morning the day before it was due. I said to [the remaining member] "Why don't you work on the part that you were going to work on and I'll do [the other member's] part and my part. Then I'll take your stuff and weave it into mine. I received [the other member's] stuff Sunday morning and it was terrible. It was awful. There's no way in the world that it would weave into mine. I ended up writing the entire thing. I sent my version back to her and said, "Here's what I've got." I didn't say, "I didn't take any of your stuff," I said "Here. Here's the way it lies. Let me know if it's okay." She wrote back, "Looks good to me" so I posted it. But it was 100% mine. We're almost in the same situation again, now. We discussed our current project, and she said that her schedule would allow her to put it together over the next day and post some stuff. As of this morning, there's still nothing there. I mean maybe she will but it just seems that I'm back doing the whole thing myself again. But I haven't criticized. I'm not going to put down somebody that, uh for whatever

> circumstances. After [one member] dropped out [the other member] and me, only have any interaction when we have an assignment. It's been minimal, I think. And it's also been quite one-sided. (Marshall, First interview)

With this understanding of the group activities, it is not surprising that Marshall's talk of the conferencing focuses, not on the working spaces, but on the plenary forums. In these he sees potential, some of it realized, but also many problems.

In this chapter, I presented in-depth descriptions of five students' activity in a computer conference. Quoting extensively from the conferences and our telephone and email interviews, I portrayed their experiences and understandings of the event.

One reason for presenting lengthy, detailed descriptions of five students was to illustrate the distinctiveness of their experiences. Having emphasized the particularity of their experiences, in the next chapter, I will develop a more general account.

Chapter 5: Thematic Analysis

The last chapter emphasized the uniqueness of each student's understanding of the computer conference. This is what stood out for me as I followed along with their activity, spoke to them on the phone, and corresponded with them via email. In this chapter, I look for commonalities that pattern their experiences.

I follow the same organizational scheme I used to summarize models of computer conferencing in the distance education literature: I discuss the activities in which the students saw themselves engaged, the outcomes they associated with these activities, and the explanations they offered to connect the activities with the outcomes. This parallel structure sets up a comparison between two accounts of computer conferencing: the experiential account provided by these students and the abstract account provided by distance education theorists. The comparison reveals some areas of overlap and many areas of departure. Both have important implications for practice, modeling, and research. I explore those in the final chapter. This chapter begins with an analysis of the students' activities.

Students' Activities

In general, the students were doing two things in their computer conference: addressing ideas that came up in the course (in their readings and in the other students' postings), and nurturing a warm environment. Such a finding is commonplace in group communications research in general and computer conferencing research in particular. Researchers who develop emergent typologies (rather than a priori, prescriptive typologies) to summarize student activity in computer conferences often divide the activity into *course work* and *social work* (e.g., Berge, 2002; Fahy, 2001; Hara, Bonk, & Angeli, 2000; Henri, 1992; Hillman, 1996; Jones, Scanlon, & Blake, 2000; Mason, 1989; Murphy, 2004; Pena-Shaff, Altman, & Stephenson, in press; Stacey, 1998; Wilson & Whitelock, 1997). This division is consistent with Bales' (1954) early distinction between *socio-emotional* communication and *task* communication in small group communication. I begin the following section with a description of how the environmental work was accomplished and then discuss how the participants addressed the content of the course.

Environmental work

Of the two general things that the students do, their *environmental work* presents the simplest picture. Only two of the students, Judith and Jacques, attended specifically to this project. In contrast with the other three students, it stood out in their conferencing activity, their interviews, and in the comments of others who referred to Judith and Jacques' activities.

Judith and Jacques acted and spoke in a manner that revealed a sense of personal responsibility for building and maintaining a warm and supportive meeting place. The following is a typical contribution from Jacques:

> As I was expecting, you posted a superb answer to that question Marshall. I liked your flow and the approach you used to explain the post-Constantine tactics. Similarly [student A's] and [student B's] historically-supported justifications win gold medals in our class' Olympics! (Jacques, Week one, Group One's plenary conference)

Jacques body of postings are replete with encouragement, recognition, and praise for his colleagues' contributions. Judith's are too. It is difficult to select one message from her body of postings because all of them manifest an effort to build and sustain a warm and supportive environment. This one is typical:

> Your focus and discussion was very well put. I especially agree with your discussion regarding inevitable change. In order for man to grow and utilize all resources, change must occur whether it be social, political, or cultural. Man would never have learned and developed from Medieval times had change not occurred. Just my "two cents."
>
> (Judith, Week 2, Group 2's Plenary Conference)

This message typifies Judith's pattern of posting replies to other students and the elements of flattery, recognition, and agreement interspersed in her responses.

The type of environmental work exemplified by Jacques and Judith is one of three legs upon which a worthwhile conferencing experience stands, argue Garrison et al. (2000). In their model, it is this *social presence*, along with skilled and energetic facilitation (or *teaching presence*), that gives rise to critical, practical inquiry (or *cognitive presence*). When communication includes elements of humour, self-disclosure, personal anecdotes, praise, and encouragement, Garrison et al. suggest, trust is built, communication apprehension is minimized, and students become more willing to offer and accept challenges to their opinions. This conception is common in distance education. Hillman (1996), for instance, who analyzed transcripts of graduate-level computer conferences, proposed a similar set of objects and relations:

> Given the nature of computer-mediated communication, one would expect to see other behaviours, such as humanizing and opining. Humanizing is used to create and maintain an atmosphere conducive to interaction; students are made to feel welcome with jokes, comments about the weather, or other light banter. Relevant personal vignettes, anecdotes, and experiences encourage trust among participants and reduce anxiety. This fosters a receptive learning environment, enhancing the climate for motivation, creativity, brainstorming, and risk taking. (Hillman, 1996, p. 44)

Much of the research on computer mediated communication conducted in the late 1970s and early 1980s when computer conferencing began to appear in offices and classrooms, was supportive of Hillman's expectation (e.g., Heimstra, 1982; Hiltz, 1978; Phillips, 1982; Steinfield, 1986).

Environmental work is a common activity in computer conferences across settings. In organizational contexts, Cheesbro (1985), Hiltz and Turoff (1978), Meyer (1985) and Steinfield (1986) have found that on average, 30% of the conferences they studied were comprised of (depending their terminology) *interpersonal communication*, *socioemotional communication,* jokes, anecdotes, and personal information. The percentage is similar in educational settings. Yoon (2003) found that the types of activity constituent of *social presence* accounted for 26% of the total among a virtual learning team. Hara et al. (2002) found that *social cues* comprised an average of 27% of student conferencing activity, but they were pleased to see its frequency decline as the conference matured. My colleagues and I searched conference transcripts from two graduate-level health sciences courses for social presence types of activity, and we found that between the two conferences, social presence ranged from 22% to 34 % (Rourke, Anderson, Garrison, & Archer (1999). Pena-Shaff and Nicholls (2004) observed a similar percentage of *support* (24%), which they describe as "establishing rapport, sharing feelings, and expressing agreement" (p. 255) in the graduate conference they studied.

A few researchers have moved beyond descriptive reports in pursuit of the relationship between environmental work and other issues. Richardson and Swan (2003) examined some of the correlates to social presence in a graduate-level course delivered at a distance. Their analysis revealed a positive relationship between social presence, student satisfaction, and learning. Gunawardena and Zittle (1996), who introduced the construct *social presence* to the field of distance education, also studied its relationship to student satisfaction. Among the group of students they questioned, 58% of the variance in their satisfaction with their distance course was attributable to social presence. This relationship was also supported in a study by Boverie, Nagel, McGee, and Garcia (1998) who found that among three variables (learning style, emotional intelligence, and social presence), only social presence was a significant predictor of student satisfaction. Additionally, Picciano (2002) found support for Richardson and Swan's finding that social presence is related to achievement. His results show that the opportunity for students to socialize and share personal experiences had a strong positive correlation to grades on a written assignment.

When the participants and I discussed what was happening in the conference, *environmental work* arose as one of two types of activity. Other researchers have identified this activity in various informal, organizational, and educational settings. Some educational researchers provide evidence for a positive relationship between environmental work and student satisfaction and perceived learning. So far, however, few studies have been designed to examine the cascading set of relationships proposed by authors such as Garrison et al. (2000) and Hillman (1996). In the next subsection, I expand on the second type of activity the participants engaged in.

Addressing ideas encountered in the course

The second general undertaking—addressing ideas encountered in the course—requires a more elaborate explanation. Style here was more personal, but there seemed to be three broad approaches to this activity: 1) presenting arguments, 2) engaging in discursive explorations, and 3) making connections between ideas and personal experiences.

Presenting arguments: Marshall serves as the model for the first approach to addressing ideas encountered in the course—presenting an argument. Clearly present in many of his postings was a single, central assertion (which I am tempted to call a *thesis*) that he developed in a coherent and complete manner. Marshall warranted his arguments with various types of legitimate grounds (e.g., data, references to sections of their texts, personal experiences) and, while I read his posts, I was reminded of Toulmin's (1958) well-known model of informal argumentation. In week eight, for instance, he responded to the moderator's question about vocational aptitude in an educational context. He addressed the central assertion of an existing post, provided evidence for his claims, and concluded with a counter proposal. He began by quoting the posting to which he was responding:

> "Do you think more rigorous screening for the basic 'soft skills' (e.g., communication, empathy, sense of humour, patience,) up front would be fair and also effective?"
>
> SNIP
>
> I am not sure that many applicants in the typical age range of 18 to 22 would qualify as "empathic" etc." I have seen individuals who did have "people skills" in their younger years but have, after some negative experiences with teaching, become pretty disparaging of their students. I have also seen the reverse scenario. Statistics from [my province's] Teacher's Association indicate that about 50% of graduating teachers are not teaching five years after graduation. Some fail to find employment, while others become completely disillusioned about the system, their colleagues, or the students. I am not sure that screening to keep people out of the profession would work, but perhaps intensive counselling about a particular career path would be positive. (Marshall, Week eight, student moderated conference)

Some of Ruth's posts had the same form and integrity. In Week Three, one of the other groups posed the following question:

> After the 630's, the Merovingian rulers were all women, children, or mental defectives, which meant that they were unable to prevent the seizure of royal property and authority by the provincial aristocracy

> (Textbook, p.167). What social factors oppressed women so that they were considered equal to mental defectives and children and unable to rule? (Group 1, Week 3, Plenary Conference)

Ruth provided the following response, which demonstrates a well-reasoned, substantive response:

> In answer to Question 2:
>
> Women in the Middle Ages were a product of their culture, a patriarchal society where women were merely the incubators for the next generation of men. Although in prehistoric societies there was goddess worship and women could lead their tribe, the ancient Hebrews reduced the status of women to mere property of men. Jesus seems to have treated women as equals (as he did all marginalised people), but Paul and Augustine soon returned women to their inferior status. It was a big shock to males when the genetic contribution of females to the fetus was discovered; before that time women were believed to just nourish their husband's 'seed'. It put the Catholic Church into turmoil. Now, it was not good enough for Mary to be impregnated by the Holy Spirit, she had to be perfectly pure herself, and her perfect acceptability to God was demonstrated by the infallible dogma that she rose bodily to Heaven. This strange dogma, the Assumption of Mary, was passed at the verge of the space age, in 1950.

> In Canada, don't forget, women were not considered 'persons' under the law until 1929. Five Alberta women asked the Supreme Court of Canada to declare that women were persons under the meaning of the British North America Act, and therefore eligible to be appointed to the Canadian Senate. The Supreme Court Ruling was that no, women were not persons under the Act. The women appealed to the British Privy Council, then the highest court of appeal, and this time they won. Not that the British were that advanced; women had only been given the vote in Britain a few years before.
>
> My point is that, for most of the history of western civilization, women have been considered inferior to men, and for the most part have accepted their role, until just the last century. I think they have always had a great deal of subversive power though. (Ruth, Week 3, Group One's plenary conference)

Both Ruth and Marshall discussed the exceptional amount of time and concentration they put into composing messages, and they spoke of their admiration for clear communication.

In the literature review, I explained at length that this type of discursive activity is present in most graduate-level computer conferences, but not to the degree that researchers or instructors would like. Recall that Garrison et al. (2001), for instance, categorized 13% of students' messages as *integration*, which they described as the presentation of a justified, developed, and defensible position. Applying Garrison et al.'s schema in a different context, Meyer (2003) categorized 22% of student posts as *integration.* Looking for similar activity, but with a different coding protocol, Gunawardena et al. (1997), Kanuka and Anderson (1998), Kanuka and Kreber (1999), and Duphorne and Gunawardena (2005), found meagre evidence of their target. Marttunen and Laurinen (2001) found that of the messages that were exchanged among the students they observed, 5% contained elements of Toulmin's model of informal argumentation (claims, grounds, warrants, and backing). Pena-Shaff and Nicholls (2004) found that *interpretation*—"using deductive and inductive analyses based on fact and premise"—accounted for 15% of a post-secondary course in communication studies (p. 257). Similarly, Hara et al. (2002) found that *inferencing*—formulating propositions and drawing conclusions—comprised 10% of the undergraduate psychology course that they studied. Jones, Scanlon, and Blake (2000) also found that "supporting answers with arguments" accounted for 11% of their students' conferencing activity.

Presenting arguments was one way in which some of the students, mainly Marshall and Ruth, engaged with the intellectual content of the course and participated in the conference. This type of activity appears to be present at a modest level in many graduate-level computer conferences.

Discursive explorations: Other students, namely Saul and Judith, offered something that approximated these informal arguments but with elements that were missing or unsatisfactory. Discursiveness (in its *rambling* connotation) was endemic, depriving their postings of coherence, completeness, and concision. Difficulties with the expression of ideas exasperated this issue. Declarations (rather than informal arguments) seemed like an apt term to describe the set of their messages that provided either no grounds or illegitimate grounds for assertions.

Saul engaged in this type of activity often. The following reply to a posting by Marshall is typical. He begins with some climate-building statements, and proceeds to fumble about at length on an issue that Marshall has raised.

> Hi Marshall,
>
> I found your paper to be well planned and written, something you have demonstrated throughout this course with apparent ease. My opinion about your question is, although there appears to be few absolutes other than zero, mathematics as any science, is an unmovable system that leaves little room for personal reflection. Perhaps even science can "perpetuate social values" if we reflect on the meaning it has for our participation in society. [The author of one our texts] makes a reference about paradigms and authors being able to say something that is "eternally true about the human condition". (80) What he has exemplified in this statement is, we all search for truth in where ever we apply ourselves. The fundamental question in this assertion, for me is, what is truth. Transcending a rudimentary understanding of truth as being an actuality or fact, might suggest that truth could mean different things to different people, and that truth emerges out of lived experiences and a need to give shape and meaning to those experiences that searches for truth. In identifying a process for making sense of truth, it is common to establish two conflicting paradigms that

> declare to have a point, and the truth lies in a moral median located between equally distant and untenable boundaries within those paradigms. Truth is a reflection of our lived experiences that discovers meaning, which expresses who we are and the society within which we live. (Saul, Week 11, Marshall's conference)

The structure of this message and its intent is quite different from Marshall and Judith's informal arguments. The structure is loose, and the purpose is to cast a wide net around a family of potentially useful topics or possible resolutions to the issue Marshall has raised.

Included in this general category are posts in which the author's intent is to field an emerging topic by listing relevant facts. Many of Judith's posts fit neatly into this category. A subset of her messages is reports of facts relating to a question that has been posed. The following example is long, but it is illustrative. In it she answers two questions, what kept Islam from becoming the dominant religion? And, what were the consequences of the transformation of Christians to Islam?

> Question #1.
>
> Islam only spread as far as the Iberian Peninsula, around the Mediterranean. Islam had strict rules such as no drinking, smoking or drugs and to enjoy life to the fullest, one had to die faithful to Allah. Other citizens did not want to abstain from life's enjoyment. Under Islamic law, the whole helps the individual that are Islamic and need help. The Islamic saw potential by giving money to poor Muslims and allowing themselves to become wealthy from those who were not

> Islamic. The Islamic felt they would benefit if there were less Muslims than other religions. They wanted territory and trade, yet did not necessarily want converts but conquest. They carried on trade with Western Europe and had trade routes to Ireland. The religion only grew by the territory they took, as well they did not influence many to become Islamic. There proceedings hindered the faith yet was of their own doing.
>
> Question #2.
>
> The long-term consequences was the fact that Northern Europe tried to block off all connections with Islamic Nations. The Christians ended up in conflict with the Islamic. The Pope saw it as a threat by losing the amount of people that joined the congregation. Cantor, pg.135, explains how the devastation was not as destructive as the Christians thought. The Christians were concerned about losing their place of worship yet many were eager to accept the Islamic faith. Cantor explains the collapse of many churches that occurred before the conversion. The devastation that was thought to be, could be solely a misconception (Judith, Week two, Group Two' plenary conference)

Although this message has a singular focus whereas Saul's does not, and it contains facts, it is still different from the informal arguments presented by Ruth and Marshall. Missing is the effort to integrate the facts into a singular assertion. The type of activity exemplified by Saul and Judith's posts was a second method of addressing the course content.

Other researchers have identified this type of activity during their observations of computer conferences. Zhu (1998) for instance developed a typology of conferencing activity to summarize her observations of a graduate-level computer conference. One of the four types she proposed was *wanderer*, the definition of which evokes the same connotation as my term, *discursive*, i.e., "moving from place to place without a known destination" (Merriam Webster Online, 2005). Zhu explains the activity of the wanderers she observed: "Wanderers' seemed to be striving for an understanding of issues by relating and associating different pieces of information and knowledge" (p. 826). *Wandering* is also consistent with Garrison et al.'s (2001) category *exploration,* which they described in various ways so that observers could identify it in transcripts: "many different themes presented in one message; possibly adding to established points but not systematically defending, justifying, developing, or offering support for information provided. It is typified by brainstorming" (p. 231). Garrison et al's observations of a computer conference indicated that 42% of the students' activity was of this type. Thomas (2002) observed two undergraduate university courses in which online discussion was used, and she identified 41% of the activity in a category similar to Garrison et al.'s *exploration* and Zhou's *wandering*. The term Thomas used was *multistructural* which she describes as "many relevant facts, but not integrated" (p. 355). Thomas', Zhou's, and Garrison's categories, *multistructural*, *wandering* and *exploration*, respectively, are consistent with the activity that is apparent in the posting from Saul that I presented previously. Judith's post is more aptly associated with a related category that Fahy (2002) devised. One of the five categories in his typology is *non-referential statements*, which he describes as "messages that impart facts or information without referring explicitly to existing messages. The poster takes a matter-of-fact stance to providing information to an audience" (p. 13). Observing a 15-week masters-level course offered at a distance, Fahy classified 52% of the students' contributions in this category. He notes the similarity between his and Garrison et al.'s category for this type of activity and goes on to speculate that it might be an inherent property of all such conferences.

Whether it is called wandering, exploring, or brainstorming , the type of conferencing activity that I refer to as discursive explorations have been identified by other researchers observing computer conferences. It has been incorporated into taxonomies of conferencing activity, and though the process of listing ideas or relevant facts is considered important, it is not valued as highly as synthesizing ideas and facts. In the next subsection, I discuss the final way in which the students transformed the intellectual content of the course.

Connecting concepts to personal experience: The bulk of Jacques and Ruth's posts were dedicated to drawing connections between the ideas they encountered in the course and their personal experiences. The following two examples from Ruth's body of postings are representative. In the first, she picks up on an issue Jacques raised; in the second, she responds to another student:

> Jacques,
>
> I certainly agree with you that kids in urban areas develop more tolerance and have more exposure to other cultures than kids in rural areas. When my husband and I first came to Canada, we lived in a small rural village in Alberta. We had moved from a very large

industrial city in England. Even though both cultures were White Anglo-Saxon Protestant (WASP), we experienced significant culture shock. It seemed everything we did was wrong by their standards. For example, we would never have asked visitors to our home to help wash the dishes after the meal, but they thought we were rude not to offer to pitch in (Ruth, Week 10, Ruth's conference)

[Student],

When I worked in a school where some deaf children were partially integrated, we did discuss problems they might have in class. These kids were a little different, as their parents had chosen to have them use their residual hearing amplified by hearing aids and a teacher microphone. They were not taught sign language. Fatigue was a problem for them - they had to concentrate very hard to understand. Also, I was told that deaf children had problems with abstract concepts as the school curriculum became more advanced. I don't know, though, whether sign language has all the nuances required for understanding abstract concepts. I can believe that deaf people do not believe they have a handicap. Do you remember the fairly recent case of a deaf female couple deliberately choosing a deaf father for sperm donation so that they could give birth to a deaf child? I find I have problems with deliberately depriving a child of a sense that most people have,

> but the parents felt that fully involving the child in their deaf culture was more important (Ruth, Week Ten, Student-moderated conference)

Ruth, and later Jacques, explained that they interpreted the course readings and others' posts through their personal experiences. Likewise, they interpreted their personal experiences through course readings and others' posts. For them, this made the readings concrete and their personal experiences generalizable.

Other researchers have observed similar activity in computer conferences. Pena-Shaff and Nicholls (2004) studied online knowledge construction in an advanced communications course. Through observations and interviews with students, they determined that the process of connecting course topics to personal experiences was a common method for students to clarify the understanding of course topics. In their observation, 24% of the student activity was classified in this category. Hara et al. (2002) observed an undergraduate course in psychology in which computer conferencing played an important role. Five to fourteen-percent of the weekly messages they observed were categorized as *reflecting on personal experience.*

Connecting topics to personal experience was the third manner in which students addressed the intellectual content of the course. As I will explain subsequently, this observation is consistent with theories of adult education, many of which position this process as central to learning (e.g., Mezirow, 1997; Kolb, 1995; Schön, 1983).

In this section, I summarized the types of activities in which the students engaged with the intellectual content of the course. They presented arguments, engaged in discursive explorations, and connected content with personal experiences. Prior to this section, I noted that they also engaged in climate-setting activity. In the next section, I summarize the types of outcomes that the students associated with these activities.

Students' Outcomes

The students associated the types of participation I described with six types of outcomes. Five had to do with transforming the content of the course. These included: 1) gathering supplemental information, 2) making information meaningful, 3) discovering and clarifying their ideas, and 4) changing their perspectives. Others related activities to their enjoyment of the course, and this included 5) engendering feelings of camaraderie and empathy. Atop these was a practical outcome, namely, 6) staying on schedule.

Gathering supplemental information

Aside from the lofty expectations for computer conferencing, one use for which students found it valuable was gathering supplemental information. Each of the students focused on and remembered different parts of their readings, and information they might have overlooked reappeared in others' postings. As Judith explained:

> I tend to learn a lot from the online discussion. A lot of what's posted is factual information, so I learn things. I might be wrong on some point, or I might not have all the information. I post factual information too when people ask questions about certain things. If there's something that I don't know, I can go back to the reading,

> research it, and respond to someone's question. We learn a lot more that way rather than just relying on the instructor or the texts for information. (Judith, First Interview)

The conference that Jacques moderated in week seven, the one in which he summarized Habermas' and Foucault's competing interpretations of the Enlightenment, provides an example of the students exchanging information from their course texts. In the following selection from that conference, the students are drawing on their course texts and extra-curricular resources to incrementally construct a complete answer to the week's issue. (I have edited the original seven-page segment severely to reduce the burden on readers). Jacques has framed the issue as "The Modernity / Post-modernity Controversy: Habermas versus Foucault." Jacques begins the discussion:

> *Jacques*: On the one hand, there's Habermas, a proponent of a collective moral consensus, social assimilation, and universality. On the other, there's Foucault championing disparate social plurality, moral diversity and heterogeneity. The former represents a preservation of the Enlightenment Project. The latter challenges Modernity's universalizing vision and dismantles the theory of European Enlightenment by analyzing the covert power transactions inherent in western paradigms involving categorization and labeling.
>
> *Judith*: Jacques, I am not familiar with the Habermas' thought, so I found your analysis very informative. Habermas believes that to flourish "democracy demands continuous conversation, open

argumentation, and debate. Emancipation can only be achieved through a regeneration of the public sphere" [*Here, Judith provides a full reference to a non-course text.*]

Jacques: Thank you for responding Judith. I was not familiar with Habermas' work either, and I did my best with the required material. In [the article we're discussing], Habermas is presented as a proponent of [*Jacques explicates Habermas' position on an issue*]. Thank you for the Habermas reference.

Judith: Jacques, I re-read the article, and I see [the point you're making]. [The author of our textbook] notes [Judith quotes from the reading]. Jacques, I feel I am neglecting an important aspect of Habermas, so please provide input if you feel it is required.

Jacques: Judith, I am delighted that you are posting in my conference. The Habermas-Foucault material wasn't an easy read, and I'm sure that I didn't get it all either. If nothing else, at least through this discussion, we have more information about the questions surrounding the modernity-post-modernity controversy.

Judith: Jacques, you are very knowledgeable and your posts are extremely helpful in clarifying the readings. I enjoy discussing Habermas with you and if there is more information that you feel would be beneficial, please post it. I am slowly but surely developing a greater understanding of the readings and Habermas' argument. Thanks for your assistance on this subject.

Ruth: Jacques, I am amazed that you say you are not familiar with Habermas. I thought you displayed an enviable familiarity with both Habermas and Foucault in your reaction paper. I have been reading the exchange between you and Judith with interest and still a great degree of puzzlement. I think the Richter article assumes a level of familiarity with Habermas and Foucault that I for one do not possess. I searched the Web hoping to find a 'Habermas and Foucault for Dummies', but was not successful. However I did find an interesting quote that relates to your question. Edward Said criticized the Frankfurt School as being [*Ruth presents a quote from Edward Said*]. Said wrote this in his book Culture and Imperialism and the extract is at [Ruth presents the hyperlinked URL].

Student: Hi everyone, one thing jumped out at me at the end of Richter (p. 640-641): [*Student quotes from the reading*]. I think this relates to Jacques' question.

Marshall: The following URL may be of interest. It is a brief interview with Habermas prior to the American invasion of Iraq [*Marshall presents the hyperlinked URL*].

Jacques: Marshall, thank you for the website, it is very informative. (Jacques, Marshall, Ruth, and another student, Week seven, student moderated conference)

As Judith explained, the students in the preceding discussion are identifying and exchanging information from their readings that is pertinent to the current issue. Toward the end of this segment, they also begin to share supplemental information that is not included in their course packages. "So, you learn more because there is more factual information is available?" I ask Judith:

> Yeah, a lot of the students bring out information that isn't in the reading or that I've overlooked. Often this will clarify some issue. Like, I'll log on and ask for clarification on something and I usually get a response from multiple people. You get more than one answer. (Judith, Interview 3)

In addition to the course materials and external resources (e.g., the World Wide Web), this group of adult graduate students often had supplemental information based on their personal experiences. During week 12, for instance, the students discussed the literary theory *structuralism.* Their text explains the contextual, rather than transcendent, nature of meaning in structuralist theory by comparing it to the nature of meaning in languages. Proceeding from this analogy, one of the students who works in the health sciences field described some of the neurological correlates of language production and reception. "Children are born with an innate understanding of how words relate to each other to form meaning," she explained:

> This knowledge helps them make sense of the sounds they hear their parents speak and enables them to master language. Mapping the brain is an inexact science and brain scans show activity in many different parts of the brain when language activities are taking place. However

> certain key areas of the brain do seem to affect language processing.
> (Ruth, Week 12, Ruth's conference)

Along with this information, she also added a personal experience:

> After a brain injury, one of my clients became very concrete in his thinking. He couldn't understand jokes that depended on puns or figurative language, and he was unable to grasp abstract concepts, so reading and math at higher levels was impossible for him. He couldn't do algebra, he didn't recognize metaphors (Ruth, Week 12, Ruth's Conference)

Some of the students expressed their appreciation for this extra information which helped them understand a complex section of their course material.

Stacey (1999), Zhu, (1998), Fahy (2002) and Wilson and Whitlock (1998) identified similar outcomes in the conferences they investigated. Stacey, who studied a group of students in a distance delivered Master of Business Administration program, witnessed the students "generously sharing resources, such as researched explanations, references from the literature, and advice from experts and industry consultants" (¶ 20). After interviewing the students, she concluded, "such resources clarified students' understandings and expanded new ideas and concepts" (¶ 35). Students that Zhu (1998) studied were not as generous with this type of activity. Zhu developed an elaborate typology of information gathering behavior among her students based on her observations of a graduate-level computer conference. She referred to the activity generally as *vertical interaction*, which she described as exchanges between more and less knowledgeable participants or, in her lexicon, *seekers* and *mentors*. *Seekers,* she described as "the ones who feel an information deficit and a need to seek information in order to gain a better or more appropriate understanding of concepts and issues" (p. 241). The seekers' corollary, *mentors,* provide answers in the form of specific information. Zhu identifies "key quotes, basic facts, procedural knowledge, and stories from experience" as forms of information provided by mentors (p. 825). Zhu examined two distinct weeks of conferencing activity in her 13-week course. She found that the frequency of information sharing across the two weeks was consistent at approximately one-percent. Fahy, Crawford, Ally, Cookson, Keller, and Prosser (2000) developed a protocol for analyzing conference transcripts based on Zhu's research. In an application of the protocol, Fahy, Crawford, and Ally (2002), like Zhu, identified only a meagre amount of vertical interaction—four-percent of the total transcript. Fahy (2002) found an identical percentage of vertical interaction in a third study. Murphy (2004a) examined conferences for the presence of several indices of collaboration. Among these was the category *sharing information* into which Murphy coded three-percent of the student activity. In a similar investigation in a teacher education course, Murphy (2004b) identified five-percent of a conference transcript as sharing information.

The students that I spoke with told me that the conference was a useful forum in which to gather supplemental information. Their assessment appears to be uncommon, and I was unable to find similar assessments in the literature. Researchers such as Zhu (1998), Fahy et al. (2002), and Murphy (2004a, 2004b) who look specifically for this type of interaction find few occurrences.

Changing perspectives

Not only were the students sharing information, they were also sharing perspectives. This often led to a change in their understanding. When the students first encountered the course readings—in the solitude of their homes, offices, or seats on the subway—they interpreted the readings through the peephole of their experience. Once others began to comment on the readings, their perspectives expanded.

Each of the five students commented on this process. Judith, for instance, told me:

> When I post my message, I've already looked up the information, I've already looked up the references, I've already researched my answer, I've already learned as much as I can learn from the composing. Reading the others' posts provides me with a new perspective. When I compose a post its one-sided—my side. If I can get something that's more than one-sided then that's great. When you add my side in and everyone else's it kind of makes up a whole, right? I mean obviously, if you're open-minded, your perspective has to change a little bit (Judith, Third interview)

Jacques also appreciated this aspect of the online discussion:

> The conferencing about such densely packed and expansive material has a value. I get to understand how my way of seeing things contributes to, or is different from, or is mirrored in other peoples' ways of seeing things. I understand myself in the context of a larger

> picture. Seeing how others see makes me question what I'm reading. It makes me question myself like, "Why do I believe this?" And I can change my beliefs based on what other people write. Here's an example. One of the groups' reflective analyses had to do with anti-Semitism during the middle Ages. A student from another group argued that what occurred in the middle Ages wasn't anti-Semitism, it was anti-Judaism and that there's an important difference. From the point of view of understanding the text, that changed my understanding. I actually went back, and I read and I talked to people I know, and it turns out that there was some merit to what this guy posted. Consequently, my worldview was affected. These things are not subtle, they're direct and they're powerful. I wasn't emotionally attached to the text, but after reading that posting I went back to the text and said, "Hey, did I read this correctly?" Then I read the next message in that conference, and a different perspective was presented. So then I incorporated that perspective, and went back and read the previous post from this new perspective. Every time I put on a different lens it changes the way that I'm incorporating the material and it become much more deeper (Jacques, First interview)

He appreciated this aspect of the computer conferences more so than the exchanges of information:

> Some people just report what it says in the book, and they use a lot of quotations and references to support what they're saying. They should

> just say what they have to say; they don't need to support it with an author. Everyone is very bright, and they all have a unique vantage point, and when you read through all the posts, you get a really good kind of mosaic of the kind of people who are in this course and that variety would really exponentially multiply if people would incorporate the readings into their own perspective rather than just summarizing the text. Blend it into their personal values, integrate their world more. That makes another reader think about things in a completely different way. This puts it into a context. (Jacques, First interview)

Saul's evaluation was similar to Jacques and Judith's:

> The part of the conference that is meaningful for me is the dialogue that enables me to look into and reflect on other perspectives that I hadn't previously considered. I'm talking about the messages that are like, "I hadn't thought about it in those terms, but now that you bring it up …" and then they go into a whole description of how the reading has them into an entirely new realm that they hadn't considered previously. That will also take me into new area and perhaps make me look at my position from a new point of view (Saul, Email correspondence, March 30, 2004)

The process that Saul, Jacques, and Judith described might be comparable to that of the 14th century art connoisseur, who was able to begin looking at paintings that represented depth on a flat surface in a technique known as *linear perspective.*

Other students' interpretations brought ideas and concepts to life in the same way that focal points, horizon lines, and shading bring the artist's objects to life: They add dimensions, depth, and hue. Others' viewpoints contextualized what was otherwise decontextualized information. Jacques' description of the process emphasizes the visual metaphor inherent in this explanation:

> I'm learning from how other people interpret the book. Like, I see the whole world different now. I see it. *I see it.* It's not that I understand it; I actually *see* it. It's like a different vantage point to be able to process it then be able to see it. I can actually live it; I see it (Jacques, Email correspondence, March 16, 2004)

Moreover, the students were able to take on, or a least *try on* others' perspectives. Marshall explains:

> It's interesting to read postings from people who hold views I don't necessarily agree with. Their views illustrate a lot of their own reality. I think to myself, "I can empathize with that, I can see that." I might change as a result of that. It might awaken me, and sometimes I'll think, "This is how I got to where I am," and I think "maybe I should explore this a bit more, keep that in mind when I do stuff" (Marshall, Email correspondence, March 1, 2004)

There is an analogue here to Piaget's (1977) notion of *decentration*, and the artefacts through which he studied this cognitive process. Decentration is defined as "the perceptual or cognitive ability to break frame, or step outside of the sharp demands of a physical stimulus" (Reber, 1996). One of Piaget's examples of decentration was *conservation*, a person's ability to break away from centering on the height of the liquid in a container and take into account other aspects of the situation (e.g., the width of the container). One technique that Piaget used to study this phenomenon was the *diorama*, which is a scene showing figures of men, animals, and surrounding objects against a painted or modeled background. Piaget took it as significant if subjects, seated before the diorama, could describe not only what they saw, but also what an experimenter on the other side could see. Metaphorically, students describe a similar process occurring when they encounter others' perspectives in their computer conference.

Zhu (1998), Pena-Shaff, Altmon, and Stephenson (in press), Stacey (1999), and Burge (1997) heard similar explanations from the students they interviewed. Zhu's mixture of masters and doctoral students informed her that the primary benefit of the conference came from reading others messages and gaining "new insights, new perspectives, and new understanding" (p. 251). Pena-Shaff et al. interviewed a similar combination of students and reported the same answer: "Overridingly, they appreciated the fact that the conference allowed them to encounter different perspectives on the topics being discussed." (p. 22). Reflecting on similar results, Stacey explains:

> The students identified the value of the conference as seeing others' perspectives, exchanging ideas, and developing their thoughts in a way that they could not achieve as individuals learning in isolation. They described the process of looking at other people's perspectives and comparing others' ideas with theirs. This contributed to and enabled

> more effective learning through active engagement with the course concepts. As one student commented: "Above all else I think the advantage of the online discussion is to be able to broadcast your message, and see other people's opinions (Stacey, 1999, ¶ 32).

Stacey concludes that her students had the opportunity to push their understanding beyond their own limits by considering the ideas of others in the group and thereby developing their individual construction of knowledge and the language with which to express that knowledge.

When the participants and I discussed the benefits of their conference for learning, one issue that arose was the value of encountering others' perspectives. 'Perspective' is visual metaphor for knowing that foregrounds the importance of personal history, context, and point of view. Among this group of adult graduate students, there were several points of view or, as social constructivists refer to them, multiple realities. The students appreciated these and they were often the impetus to changes in understanding.

Making Content Meaningful

A related outcome, discussed equally often in the computer conferencing literature and by the students with whom I spoke, was the process of meaning making. This was described variously as finding the personal relevance of a topic or fitting new information and concepts into ones' existing construction of the world.

Composing messages was associated with these types of outcomes, especially for Jacques and Ruth whose posting activity consisted largely of forging connections between their experience and the course readings. Through this process, ideas presented in the course took on meaning and significance.

Connecting personal experience to course content dominated Ruth's posting. In her efforts to understand and assimilate the course themes, Ruth synthesized the other students' ideas, material from the readings, and her own experiences. When Ruth and I talked about this issue, she explained:

> I relate the course content, say *structuralism*, to my experience, like my job in [the health services]. That way, the course content enriches my everyday experience, and my experiences help me decipher the course material. (Ruth, Email correspondence, March 30, 2004)

This process dominated Jacques' posting also. In a conference I referred to previously, the one in which the students were discussing *structuralism*, Jacques replied to the following prompt from Saul: "Paradigms, like languages, are neither true nor false. They cannot be evaluated in an objective way. Cite an example of how language has been used to create conflicting paradigms" Jacques responded:

> Interesting question, Saul. I would like to discuss language / idea conflicts from my personal life rather than derive one from the book. In terms of languages, I feel that languages are symbolic manifestations of ideologies. Sometimes, conflicting ideologies lack a "language bridge" and this can lead to misunderstanding and conflict. For example, I am a Franco-Ontarian who can fluently speak English and French. My wife is a Manitoban Cree who speaks English and Cree fluently. I don't understand Cree, and she does not speak English.

> Our language of mutual communication must be English. Early in our relationship, we experienced communication problems due to language use, as there are for instance no English words for many Cree ideas. Consequently, after asking her certain questions, I misinterpreted her lengthy response pauses as rude avoidance in our conversation. Due to English miscommunication, our interactive "glue" momentarily became disconnected until the intended English response (understanding) was better explained and conversation restored. Within the limited reality of one's ideology, it is difficult to explain the awkward, frustrating confused feeling we experienced during those occurrences. (Jacques, Saul's conference Week 11, January 3, 2004)

Jacques and I had a chance to talk about his conference activity during our second interview. "One of the things that stands out about your posting," I prompted, "is that you seem to talk about your experiences often. I notice you talk about [your job], and life in [your town]." He responds:

> Yep. When I take a course like this theory course, I can't help but draw on all of my experiences. I use my culture, I've used my wife's culture, I've used my rural isolation. It's not just the way I post, it's the way I live. All things are personal. Whether it's a master degree, [my other course], going to a staff party, walking in the community, or going to the grocery store. The whole thing is a big stew in which I'm learning and I'm an active participant. I just look at this course as another opportunity, another place to learn. The reason I tend to post

> that way is that it's the best way for me to integrate the concepts of the course. (Jacques, Second interview)

In part, Jacques makes connections between the course topics and his experience because it is an effective way to learn, and in part, because that is his approach to life.

Jacques and Ruth are not the only students who engage in this process. One of the class' plenary discussions revealed explicitly the role of personal experience in learning and understanding. In the discussion, the students were dealing with the beginnings of Christianity as an organized religion and the origins of the Catholic Church. (*I have edited the discussion severely to reduce demands on the reader. The students participating in the selection are not the five that I have been discussing throughout this report, so they are identified as* student n, student n + 1, *etc.*):

> *Student 1*: Would this be the beginning of Catholicism as we know it? I wasn't brought up Catholic so unfortunately I really don't know too much about it. However, I'm starting to see that this may be where it got its hierarchical structure.
>
> *Student 2*: I was raised in the Catholic faith and there are a number of aspects of Catholicism that seem to point directly back to the time we are discussing. First of all, the Church has always been known as the ROMAN Catholic Church although this title is rarely used.
>
> *Student 3*: I'm not Catholic either, and when I see images of the Pope, I see a feeble, old man uttering incomprehensible words—it has no meaning for me. I think also of the media overkill that was given to his

> visit to [my city]. But then, that's my perspective. (Three students, Week nine, student-moderated conference)

The subset of students who have some personal experience with the issue under discussion have a different, apparently privileged, tack for coming to grips with the issue, and this is reflected in the phrases that preface their opinions (e.g., "I was raised in the Catholic faith…."). Similar prefatory comments identifying a students' connection to issues appear throughout their conferences. There seems to be an agreement among these students that personal experience lends one's opinion some authority and that lack of experience excuses ignorance (e.g., I wasn't brought up in the Catholic Church, so unfortunately I don't know…").

In the literature, computer conferencing has been praised for its ability to facilitate this type of learning process. Mason (1991) studied interactivity in a distance education course at the Open University in Great Britain. She found that students were learning primarily by integrating their personal experience into their class discussions. Gorsky, Caspi, and Tuvi-Arad (2004) studied the efficacy of a computer conference in their undergraduate chemistry course. They approached the investigation from the perspective of deep and surface learning (Marton & Saljo, 1976), and they found that students who adopted a deep approach actively searched for meaning in the subject matter by relating it to their experiences in a concrete manner. Those who adopted a surface approach, conversely, rarely connected the topics to their experience. Hara et al. (2002) studied the potential of computer conferencing to facilitate meta-cognitive activity among undergraduate students. As evidence of meta-cognition, they looked for instances of students *evaluating, planning, self-questioning,* and *reflecting on experience*. In the conference weeks they observed, *reflection on experience* dominated the meta-cognitive category at 35%. Knowlton (2002) insisted that his students use the computer conference in this manner. He based 25% of their course grade on their ability to forge connections between their day-to-day lives and the course material. After using conferencing in this manner for several years, Knowlton argued that it "allows students to synthesize their personal and academic selves and to construct knowledge" (¶16).

Some of the students I spoke with were not content with a detached, declarative understanding of their course materials. Instead, they tried to appropriate the course topics by relating them to their own experiences. The conferences, they suggested, provided a useful forum for this activity.

Composing thoughts

Some students did not write about their personal experiences, yet they still found the process of writing messages to be a valuable learning activity. These students emphasized the usefulness of carefully articulating their understanding of the course readings, and they accompanied these assessments with descriptions of their laborious processes of a) jotting down notes as they read and re-read articles, b) drafted messages on paper, c) copied them into their word processing software, d) edited them, and e) reviewed them again when they cut-and-pasted them into the conference. To the extent that students engaged in these processes, they discovered, clarified, and organized their thoughts on course topics. Because of its genesis in the writing process, it is convenient to refer to this process as *composing thoughts*.

Composition, in writing or painting, has to do with the arrangement of ideas or objects. Some students reported spending large amounts of time on this activity as they struggled to identify an organizing principle, selected a manageable but complete set of constituent ideas, and arranged these in a manner suitable for public presentation in their postings.

Marshall was one of the students who spent a considerable amount of time composing messages, and ultimately he identified this process as the most valuable element of computer conferencing. In an early email exchange, he wrote:

> There is a value to posting that I have recently come to appreciate, and this has to do with writing to myself as an audience. Others might not always see the value of a posting, but it still assists the writer. On a couple of occasions, I began responding to others but then I didn't post what I had written. For me, it serves to get my thinking in order. The act of writing prompts me to re-evaluate my thought processes. Perhaps others do the same (Marshall, Email correspondence, March 19, 2004)

Later, he elaborated on this topic:

> You and I have discussed the real value of these conferences previously. Preparing a posting helps me put my thoughts together. I'm sure it's the same for others. Even if their messages aren't valuable to me, they're probably valuable to them. I have had very few revelations from others' postings. I have had inspirations while I was writing, though (Marshall, Email correspondence, March 30, 2004)

Fulwiler (1986), who was instrumental in the writing-across-the-curriculum (WAC) movement, championed the role of written composition in learning. The research that he began is supportive of the following assertions: a) the permanence of the written word allows a writer to rethink and revise over an extended period, b) writing demands explicit expression if meaning is to remain constant beyond the context of writing, c) conventional forms of discourse provide resources for organizing and thinking through new ideas or experiences, and d) the active nature of writing provides a vehicle for exploring the implications of unexamined assumptions.

Bereiter and Scardemalia's (1987) research also points to the value of writing as a way of learning. As I described earlier, they identify two different kinds of composition processes that students engage in when confronted with a writing assignment. The first, *knowledge telling,* involves a straightforward process of writing down whatever comes to mind in the order in which it arises. The second, *knowledge transformation,* involves managing the interplay between information and rhetoric—between what a writer knows about a subject and the task of communicating this knowledge to another. Bereiter and Scardemalia argue that there is educational value in the knowledge transformation process. As writers attempt to communicate their knowledge, they are alerted to deficiencies in their understanding. Ideally, they are then prompted to research, reflect, and reconstruct their understanding of a topic, and then return to the writing task. This analysis is consistent with some of the students' accounts of message composition.

Garrison et al. (2000) discuss these processes in the context of computer conferencing. In the document that lays out their conceptual model, they touch on the value of asynchronous, textual discussion for learning. Building on studies of composition and its role in classroom learning, they argue that textual discussion, more so than verbal discussion, prompts students to articulate their ideas carefully. Asynchronous discussion gives them the time to consider what they want to communicate:

> Text-based communication provides time for reflection. For this reason, written communication may actually be preferable to oral communication when the objective is higher-order learning. Some of the literature does, in fact, suggest that written communication is very closely connected with careful and critical thinking (Applebee, 1984; Fulwiler, 1987; White, 1993). These authors suggest that it is the reflective and explicit nature of the written word that encourages discipline and rigor in our thinking and communicating. In fact, the use of writing may be crucial when the objective is to facilitate thinking about complex issues and deep and meaningful learning (Garrison et al., 2000, pp. 90-91)

Distance educators have constructed computer conferencing as a vehicle for discussion; therefore, the role of composition has often been overlooked while searching for the effects of interaction. However, its importance surfaces in some reports. One of the students that Wilson and Whitelock (1997) interviewed reported:

> The preparation of messages off-line forced me to think problems through before putting my response into a message. Answering

> questions gave me time to reflect about my own understanding of the domain rather than just thinking I understood it. (p. 268)

Pena-Shaff has conducted several empirical studies of computer conferencing (Pena-Shaff, in press; Pena-Shaff, Martin, & Nicholls, 2001; Pena-Shaff & Nicholls, 2004; Pena-Shaff & Nicholls, 2001) and she has come to see it as:

> An instrument for thinking because in the process of explaining, clarifying, and elaborating our ideas and thoughts we engage in cognitive processes such as integrating, elaborating and structuring. It is in the process of articulating, reflecting, and negotiating that we engage in a meaning making or knowledge construction process. This process becomes powerful when done in written form, because writing, done without the immediate feedback of another person as in oral communication, requires a fuller elaboration in order to successfully convey meaning. (Pena-Shaff & Nicholls, p. 245)

Pena-Shaff, who first studied computer conferencing from a social constructivist perspective looking for dialogue and the co-construction of meaning, has come to view it from a cognitive constructivist perspective. She argues that the monologues that dominate online 'discussion:'

> Represent one person's ordering and analysis of experiences and a significant intellectual challenge. Many of the monologues show evidence of critical reflexive thinking. Many monologues are quite long, and they include self-questioning and argumentation of one's own ideas (Pena-Shaff et al, 2001, p. 63)

This analysis is important. Where other observers have decried the lack of real interaction in conferences, Pena-Shaff examines what is happening and finds value. The following observations and interpretations typify Pena-Shaff's studies:

> We were unable to find explicit collaboration between participants. It was not common for students to respond to other participants' questions or engage in a conversation type of discussion. Few messages showed conflict (6%), brainstorming (4%) or social interactions (4%). However, we found that students were deeply engaged in self-reflecting and rationalizing the ideas being discussed. Most of the messages showed sophisticated reflective practices such as self-questioning (20%), reasoning (20%), argumentation (20%), conclusion building (12%), and hypothesis building (12%). Many of the messages looked like monologue, a conversation with the self in which participants posed questions for consideration, and through analysis and argumentation reached their own conclusions (p. 189)

Zhu's (1998) students offered analyses that were similar to Pena-Shaff's: "Some enjoyed the online discussion because the action of writing down their ideas encouraged them to think and reason more deeply and clearly (p. 254)". Other researchers such as Chen and Hung (2002) and Hoadley and Enyedy (1999) have also come to see computer conferencing in a similar light. Commenting, as others have, on the predominance of non-interactive messages in computer conferences, Hoadley and Enyedy suggest "in monologue, meaning is not developed as a product of interaction but the expression of one person's ordering of experience" (p. 3).

For some of the students I studied, the beneficial effects of composition were embellished by the public nature of the writing task. More so than journaling, the public context introduced rhetorical elements to composition, and with it, the need to consider the readers' perspective, to communicate clearly, and to forgo spontaneous, rambling discourse in favour of concision. As Judith explained:

> Knowing that they're going to read it definitely enhances my thinking skills. For sure. Because I have to think about it, right? I have to make sure my interpretation isn't misinformed. Yeah, I actually have to post it in an organized fashion; if not, people are not going to understand. I did that once to Marshall—I was on midnights actually—and I posted a question to him and he sent me an email back saying, "Um, I don't really understand this." And I'm like "I'm sorry, I posted it at 3 o'clock the morning, I was at work until midnight, and I was very tired." Anyway, in the morning I rewrote the question and sent it to him and he's like, oh that's better. (Judith, Email correspondence, March 17, 2004)

Hoadley and Enyedy (1999) speculate that the explicitness of monologic expression represents a significant intellectual challenge. Referring to studies by Chi, de Leeuw, Chiu, and LaVancher (1994, 1991), they suggest that the value of concise and concrete expression of one's ideas for one's own learning has been well documented.

Not all the students reaped the benefits of composition. Saul's activity for instance was more consistent with Bereiter and Scardemalia's (1987) description of *knowledge telling* than *knowledge transforming*. Spontaneity and impulsiveness were more apparent in his messages than reflection and deliberation. In chapter four, I presented several of his befuddling conference messages, one of which was: "What we are and what we do are not mutually absolute" (Saul, Week 3, Group Three's plenary conference); another was, "Stage developments represent the various life markers that we experience as we age and develop. This has an advent of being a paradoxical assertion with latent tendencies for an anarchical response" (Saul, Week 3, Group Two's plenary conference). Predictably, when I asked him how his participation in the conference contributed to his learning, he did not talk about the benefits of composing messages.

A case like Saul's suggests strongly that the relationship between asynchronous textual communication and deliberation or reflection is not mechanical or linear as many educational technologists propose. Many try to construct cases like Saul as special by qualifying their phrasing of the benefits of computer conferencing: they assert that it *facilitates* critical thinking, *allows for* reflection, and *promotes* higher order processes. However, this concession does not fully disguise a common tendency to frame educational media in technologically deterministic ways. In a subsequent section, I address this issue in detail.

Researchers working on issues other than computer conferencing have demonstrated convincingly that written composition can be a useful learning activity. Many of the students whom I observed and spoke with confirmed this suggestion. In the distance education literature, computer conferencing has been constructed as a tool for communication and interaction; yet, the consistent lack of frequent or meaningful interaction has forced observers to explore other conceptualizations of this tool. Many are converging on its value as a means for students to discover and clarify their thoughts through regular writing.

Each of the four outcomes that I described in this section—composing thoughts, making meaning, changing perspective, and gathering supplemental information—are subsumed by the category of outcomes I called *transforming course content.* However, not all of the students' activities were related with this outcome. Some were related to the students' enjoyment of their study experience. These included reducing their feelings of isolation and engendering feelings of belonging. I will describe these in the next section.

Feelings of camaraderie and empathy

Holmberg (1983) uses the phrase *increasing study pleasure* to refer to one of the benefits of interaction for distance education students. He argued that personal relationships develop through interaction between students and members of the supporting educational institution. These contribute to study pleasure, which is related to motivation, achievement, and completion rates. Originally, Holmberg was thinking about the phone calls and correspondences between tutors and councillors, but recently he has added learner-to-learner conversations to this list (Holmberg, 2003).

This is an outcome that some of these five students discussed. Jacques, for instance, talked about the pleasure he derived from communicating with others:

> I was just chuckling like a hyena here at the screen when I was posting my thing because I was responding to [another student's] post, and I kind of ended it by asking 'how far down can one deconstruct.' I didn't know if it was appropriate for me to use the metaphor of exposing the toilet and then having to go search for the plunger, but I was laughing when I put that on. I hope people saw the humour in that, didn't take it literarily. (Jacques, Second interview)

He also talked about how the feelings of solitude, which are common among distance students, can be mediated by the conference activity:

> Being that each of us is working in an isolated environment in this distance education model, the conferences need to be more than just an abstract, intellectual, post-paste thing. I mean, the whole idea of this forum, given that we don't have face-to-face contact, is to compensate for that as best as we can—to provide a warm, supportive environment online that has more than just comments about the content we are studying. You could do *that* by correspondence without any conferencing. (Jacques, Second interview)

Some, like Saul, were gratified to see that others were thinking the same things they were, or, in Ruth's case, to see that others were struggling as much as she was with some of the readings:

> The conference makes you aware that there are other people taking this course and that they're struggling too. We're all struggling in it together. I think that maybe it's been like a window into the other

> people taking the course. If I were just doing it as a correspondence course I'd think there was just me. (Ruth, Second interview)

In Garrison et al.'s (2000) model, the role of interpersonal communication is somewhat different than what these students describe. With their focus on critical, higher-order thinking, they position social communication as antecedent to critical discourse. In the tradition of cooperative learning theorists like Johnson and Johnson (1996), they argue that students must develop rapport and trust before they will risk sharing their interpretations and critiquing others' opinions.

Parts of Ruth's experience fit Garrison et al's (2000) conceptualization. During the initial weeks of the course, she was on the verge of withdrawing because she was intimidated by the other students' erudite postings. During this time her messages were few and short. Eventually, it became apparent in the others' messages that they were struggling too, and she began to relax, settle into the conference, and participate with less anxiety.

Studies that examine students' experiences of participating in computer conferencing are supportive of Ruth's' experience. The apprehensiveness that students associate with posting is reported frequently. Often, they report that they are afraid to ask questions, worry about looking stupid, post only to topics for which they have an authoritative command, have difficulty expressing themselves openly, or are embarrassed by their earlier posts when they look back on them (Stacey, 1999; Tolley, 2000; Weisenberg & Hutton, 1996). One of the graduate students that Weisenberg and Hutton studied said: "I was surprised by the anxiety that I experienced when preparing messages. I think it has to do with having your thought hang out there for a week" (¶ 22). Another said, "I am finally getting to the place where I am worrying less about what others think than about my posts" (¶ 21). Some of the students that Stacey (1999) studied reported similar reservations: "I don't tend to ask questions in a forum of a huge number of people, because I think, 'oh this could be a stupid question'" (¶ 17). Tolley's (2000) students held sympathetic views: "I think that in this course I've felt a bit like I didn't know what I was talking about enough to post messages - you know, not quite adequate" (p. 91).

In previous studies I found that students diverge on their assessment of the social elements of a computer conference (Rourke, 2000; Rourke & Anderson, 2002a). Some students see distance education as an opportunity to develop relationships based on common intellectual interests. Finding themselves in distance settings, these students miss the collegial interaction they associate with on-campus classes. Others opt for distance courses specifically because it allows them to work independently and instrumentally. They begrudge the computer conferencing activities and find the messages of praise, encouragement, and support tedious.

As I observed and spoke with Judith, Jacques, Ruth, Saul, and Marshall, I found evidence of both of these attitudes. Judith and Jacques were careful to include elements of social communication in all of their messages. Indeed, a large portion of Judith's messages was entirely social. Judith enjoyed both ends of the socio-emotional communication, receiving and giving. A portion of her posting is driven by the desire to create a welcoming climate. During one of the student-led conferences, for instance, she posted a message that I thought was unusual. It was not an exchange of information, a critique of another's interpretation, or a sharing of her personal experience. She wrote only, "Interesting post, Jacques. I don't have a good grasp on the topic, so I'll have to read the article again" (Judith, Week 12, Jacques' Conference). I asked her about the post, and she explained that its purpose was to show support for Jacques:

> To address the content of his question would have been useless because I really didn't understand the reading. But, I didn't want him to think I was ignoring him, so I just told him that I was going to go back, read the text, and then post a response to his question. I think that allows the students to know that people are actually reading their messages. I don't like people thinking that they're being ignored. (Judith, Third Interview)

In our first interview, she described the importance of interpersonal communication by comparing the environment of two separate courses in which she was currently enrolled:

> Most people in [course A] don't respond to personal information. To me it's not really, uh, it makes everyone further apart. It's very cold. You know, as a group, we're working together and studying the same material from January to April every week, sometimes everyday. People should get to know each other on a somewhat personal level, right? It enhances the educational experience a lot more if that occurs. It just seems so impersonal to me, that's all. In [course B], people usually open with the name of the person they're addressing. Sometimes they will ask, "How are you?" or they'll say "Good

> morning." It's like talking to a person, not like talking to the computer, or just posting something to get marks. (Judith, First Interview)

Some of the students disagreed with this sentiment. Saul, for instance, was outspoken about Judith's efforts. "This is a conference for a master's program," he said contemptuously. "To receive a response like 'great post, really enjoyed it', there's no value for me at all. It's just a waste of time and space. I look and it and say 'why do they even bother?'" (Saul, First interview). When I asked Marshall about the same elements, he too was dismissive and offered a derogatory comparison to teaching children.

Pena-Shaff et al. (in press) identified the *perceived lack of substance and usefulness in the discussions* as a major barrier to their students' use of the conferencing system. Some of their students "considered their peers' postings just personal thoughts with no valuable content" (np.). Fang (1998) and Tolmie and Boyle (2000) encountered similar reports from students.

Communication researchers have studied the role of this type of interaction in group work extensively, and it has received continuous attention in the field of distance education. In a study I described earlier, Stacey (1999) interviewed students in a graduate-level, distance education business program. She found support for each of the process-outcome relationships mentioned by Ruth, Judith, and Jacques. "It makes you feel like there's someone else there, and you're not sort of sitting all alone out away from contact with other people," reported one of her students (¶ 46). Another repeated this sentiment:

> I think it takes away the isolation of distance education. Certainly the group that we had running here in the second semester is a tight knit group now and the interaction through the computer has actually brought us together both from an education point of view and probably socially as well. (¶ 49)

Wilson and Whitelock's (1997) students also offered assessments that were supportive of Ruth's. "The students were generally reassured when their problems highlighted common difficulties. They were able to overcome feelings of isolation and were able to feel part of a group," reported the authors (p. 268). Stein, Wheaton, Calvin, and Overtoom (2003) identified a similar phenomenon in their survey of nine undergraduate and graduate courses. They found that it was the sense of shared hardship, more so than anything else that led to the development of a sense of community among their students. In a series of studies, Rovai has argued that feelings of rapport, camaraderie, and what he calls *community*, reduce attrition rates, which are a perennial problem in distance education (Rovai, in press; Rovai, 2002; Rovai, 2001).

The feelings of camaraderie and empathy were an important outcome of the conference for some of the students. For others, their conference activity was useful in helping them to transform the course content either through presenting arguments, engaging in light discursive explorations, or by connecting the content to their personal experiences.

Scheduling

Atop these outcomes, conferencing played an instrumental role in keeping the students on schedule. The requirement to post publicly regularly motivated the students to keep up with the readings.

Ruth, for instance, didn't want to "look stupid" in her postings, so she made sure she did her homework (Ruth, Second interview). "It makes you more accountable for doing something every week," she told me:

> I have to work harder because I don't want to come off looking like an absolute idiot saying something ridiculous. It is preferable to look like an idiot in front of one professor than a whole bunch of students. So that's probably good for me. (Ruth, Second interview)

Marshall also recognized that the weekly conference activities kept him on track and ensured his timely completion of the assignments and ultimately the course. At one point in our second interview, he compared both variants of the courses in the program—the grouped courses (like this one) and the independent study courses:

> *Marshall*: I'm not saying I am learning more than if it was independent, I'm saying I'm learning. The point is the scheduling. With forced deadlines, you have to do it. With deadlines, practically anybody can make it.
>
> *Liam*: What would the ideal situation be for you?
>
> *Marshall*: Independent study with group participation—but I don't mean 'group work,' just scheduled group activities. I don't particularly

> find too much value in collaborating with other students on a single project. (Marshall, Second interview)

Perceptions that the weekly conferences helped the students keep pace and stay on schedule seem obvious, but few researchers have reported on this outcome. Several researchers have asked students about the perceived value of computer conferencing, but the responses are typically related to achievement and satisfaction. Rates of attritions in distance education, nonetheless, are a perennial concern in the literature. Carr (2004) reported dropout rates as high as 50% at some post-secondary institutions. Moore and Kearsley (2005) support this figure, reporting a general dropout rate for distance education courses between 30-50%. (Both Carr and Moore and Kearsley note that dropout rates vary widely.)

Carr offers some anecdotal evidence that scheduling can improve matters. A university administrator that she interviewed reported that his institution's course-completion rate rose from 62% to 90% once instructors began holding regular synchronous chats with students. Many authors who have studied dropout rates in distance education stress the need for regular contact with students, but pacing and scheduling are not highlighted as reasons (Xenos, Pierrakeas, & Pntelas, 2002; Chyung, 2001; Spitzer, 2001; Merisotis, 1999; Sevlam, 1999; Holmberg, 1995; von Prummer, 1994; Ostman, 1988; Eisenberg, 1990).

In the previous section, I constructed some of the things that the students talked about as *outcomes* of the conferencing experience. I identified seven types of these. Five relate to the ways in which they handle or transform the content of the course. Another set had to do with the students' enjoyment of the course. A final outcome was a practical matter of staying on schedule and completing the course.

Experiential Versus Formal Accounts of Computer Conferencing

In the first section of this chapter, I discussed the types of activities the students engaged in and the outcomes they associated with their participation in the conference. As I did so, I drew on empirical studies from the distance education literature, in part, to show how our models are able to account for the results of particular uses of computer conferencing. However, there were areas in which the participants' experiences and understandings departed significantly from the vision of conferencing presented in our literature. In the next section, I focus on these areas.

Previously, I demonstrated that there are two main categories of models of the role of computer conferencing in post-secondary distance education—those that present computer conferencing as a vehicle for the co-construction of knowledge and those that position it as a vehicle for critical discourse. According to their progenitors, these models represent, respectively, social or cognitive constructivist perspectives. The events of the conference I observed and the experiences of the students I spoke with differed from both sets of models in one area primarily—the types of activities in which the participants engaged.

Social constructivist models

The social constructivist notion of learning as meaning making is at the heart of one of the two sets of models of computer conferencing. For social constructivist educators, the meaning of course material is not contained objectively and explicitly in the readings, textbooks, and lectures; instead, it is created through negotiations among the students and the instructor. In these models, computer conferencing facilitates an on-going, contextualized process of knowledge production and reproduction.

This model of online discussion is articulated most clearly by Gunawardena et al. (1997), and it is formalized in their rubric for assessing student participation in computer conferences. I presented their rubric in detail earlier but essentially they look for students to be sharing opinions, identifying areas of agreement and disagreement, and negotiating shared meaning. As I described earlier, some of these processes were apparent in my students' experience of computer conferencing. However, others were not.

It was Gunawardena et al. (1997) who published one of first studies to bring similar findings to light. Their empirical exploration of their model yielded the following results:

> The percentage of all postings that were categorized in each of the phases of [our collaborative meaning making model] were as follows:
>
> - Sharing and comparing information: 88%;
> - Discovery of dissonance: 4%
> - Negotiation of meaning: 3%
> - Application of newly constructed meanings: 2% (p. 425)

Reflecting on these observations, Gunawardena et al. noted:

> These results forced us to question both the validity of the model and its theoretical underpinning. The interaction was like the type of

> informal interaction that takes place at breaks or during social activities. Though valuable, informal professional discourse is not congruent with the active construction of knowledge. (Gunawardena et al., 1997, p. 427)

Subsequent researchers have used Gunawardena et al.'s social constructivist model of conferencing and found similar results. De Laat (2001), for instance, categorized less than one percent of the conference she studied as *negotiating meaning* or *co-constructing knowledge*. Pena-Shaff and Nicholls (2004) were also frustrated in their search for evidence of the co-construction of meaning in a computer conference. Toward the conclusion of their article, in fact, they begin placing the term *conversation*, as it relates to the conference activity, in ironic quotation marks:

> 'Conversations' online are more like people standing up and taking the floor one by one and speaking as long as they want. Whoever speaks next may talk about anything. It is like conversing in soliloquies or, in centuries past, through letters carried by horse and driver to distant colonies. Others have little influence on one's thoughts at the time of writing. (Pena-Shaff & Nicholls, 2004, p. 257).

Describing a similar situation, Curtis & Lawson (2001) noted:

> Even when the messages revealed that students were indeed developing ideas, few threads of discussion showed a dialogical process in which ideas and assumptions were discussed until some common understanding of the topic was reached. As in Hara et al.'s (2000) study, where similar findings were reported, one possible

> explanation is that the postings didn't challenge or motivate students to go back to the discussion and continue it (Curtis & Lawson, 2001, p. 262)

Jonassen (1995), who was influential in bringing the social constructivist perspective to prominence in distance education, sees learning as a social dialogical process that involves both internal and social negotiation. Unfortunately, the students in my case study and students observed by Gunawardena et al. (1997), Curtis and Lawson (2001), De Laat (2001), and Pena-Shaff and Nicholls (2004) engaged predominantly in internal negotiation at the expense of social negotiation. Recall that Marshall, Ruth, and Judith identified internal negotiation in the form of composing messages as a valuable element of the conference. Along with these three students, many authors find value in internal negotiation (Hoadley & Enyedy, 1999; Chen & Hung, 2002; Pena-Shaff & Nicholls, 2004). Pena-Shaff and Nicholl's offered this evaluation: "Our findings suggest that computer conferencing supports primarily a process of self-reflection rather than a dialogical process of meaning construction. Elaboration and clarification predominate, and as in studies by others, the exploration of dissonance and the negotiation of meaning are less often seen" (p. 261). Although authors such as Pena-Shaff and Nicholls are finding value in these processes, they reflect the assumptions of cognitive, not social constructivism.

Along with *conversation*, Jonassen (1995) identifies *collaboration* as a second essential attribute of constructivist learning environments, stressing: "The most valuable activity in a course is any opportunity to work and interact together" (p. 8). The students in the course I studied were given this opportunity. In the first six weeks of their 15 week course, they were partitioned into groups of four and assigned collaborative tasks to work on during the week. Unfortunately, they subverted this effort: They met rarely and worked independently. Jacques espoused an approach to group work that was common among the students:

> I go to my group and bring up issues that I feel are important. I cross my fingers and hope that the rest of the group are not oppositional and don't have some kind of personality disorder where we're going to be forever head butting. So far, it's clicked. Everyone has the same ideas. But, you can't always have your way in group work. (Jacques, First interview)

Unlike Jonassen, Jacques views the process of arguing with others over the correct meaning of ideas as pathological. He continued:

> Early on, I decided to take on big chunks of the group work. If one of our assignments was to do an entire thing, rather than dividing it up, I just did a version of the entire assignment and posted it. In our last assignment, for instance, our group had to create a 1000 word reflective analysis. I just posted my whole reflective analysis on the second day of the week. (Jacques, First interview)

The collaborative element, which Jonassen et al. prescribe as essential to knowledge co-construction, was often missing in the conference I studied.

A final prerequisite for meaning making that Jonassen et al. (1995) identify is *context*. They emphasize the importance of solving authentic problems or real-world cases. The course that I studied did not include activities of this type. Instead, the students read articles and chapters, wrote essays, and composed messages for the computer conference. This represents the type of de-contextualized form of education that inspired situated learning theorists to take up their program of research (e.g., Lave & Wenger, 1991).

Ultimately, the usefulness of Gunawardena et al's (1997) social constructivist model of teaching and learning to account for what occurred in the conference I studied is limited. Some of the activities and outcomes associated with this model were present, but many were not. Students explored issues, shared and compared information, took positions, reflected on them, and evaluated them. But they did not engage in the negotiation of meaning or the co-construction of knowledge.

Cognitive constructivist models

A second set of researchers sees computer conferencing not as a forum for collaborative meaning making primarily, but as a forum for critical discourse or mutual critique. These authors draw on the assumptions of cognitive constructivism and socio-cognitive theories of teaching and learning.

In a previous chapter, I described the role that socio-cognitive theorists attribute to discussion, and its role in learning. I reviewed work by neo-Piagetians such as Perret-Clairmont et al., (1989), Doise and Mugny (1986), and Berkowitz and Gibbs (1983) who argue that when students are forced to articulate and defend their opinions, their thinking is sharpened. They recognize deficiencies in their reasoning, errors in their assumptions, and gaps in their knowledge. In this section, I provide a brief review of how Brookfield and Preskill (1999) and Garrison et al. (2000) have transposed this perspective into adult and distance education contexts, and I compare its tenets to the experiences of the students I studied. The comparison provides insight into why these models are rarely supported in empirical studies.

The socio-cognitive perspective of educational discussion is captured by Brookfield and Preskill (1999). Discussion in classrooms, they write, consists of two processes, the exchange of views and mutual critique. They argue that it is the critique, the reciprocal challenging of others' assertions that makes the activity worthwhile, not the exchange of views.

Unfortunately, this rarely happened in the conference that I studied. This is a finding that is typical in computer conferencing studies. Hara et al. (2000), for instance report, "Unfortunately, other than a few minor disputes, there was never a sense of real heated or seminal online discussions with students taking sides on issues or coming to compromise. This was unfortunate" (p. 141). When I asked students to explain the role of the conference in learning, only one (Marshall) provided the type of account that Garrison et al. (2001) and Brookfield and Preskill (1999) would like to hear. More often, the students talked about the value of organizing, clarifying, and externalizing their thoughts while preparing messages, or the value of seeing others' perspectives.

Judith and I discussed the relative absence of critical discourse at length, and she gave four reasons why potential debates did not take off. First, she worried that others might misinterpret any critique as an attack. Second, she noticed that some of the students were unreceptive to alternative perspectives. Rather than deal with them, she noted, students responded by reasserting their original position. Her third reason had to do with the attributes of computer conferencing. Judith observed that her peers were able to ignore counter proposals, even ones that were explicitly addressed. In her analysis, students were more likely to look for congenial opinions and reply to these. She contrasted this to classroom discussions in which one is compelled to respond to previous and subsequent speakers, particularly if they express disagreement. Her final reason, in which she talks specifically about challenging Marshall, was enlightening:

> Its really hard to offer criticism to someone else who's already read the text and knows a lot more about it than I do. I haven't read the text yet, and he's certainly a lot stronger in the [content area] than I am. So, it would be really difficult for me to provide a response that he could actually learn from. He's a [content area] buff, and for me it's not my thing. If a psych topic (*her undergraduate focus)* had come up, it wouldn't be a problem. Actually, I'm running a conference next week and my topic is Humanism, so I'm sure I can incorporate several psychological aspects in there. But it's really difficult to criticize someone who's well advanced or at least more advanced than I am. If I have the knowledge I can be more critical. I mean, I can't really criticize something I don't know. (Judith, First interview)

Judith received her course materials late. Marshall received his months before the course began, and he was often on his third reading when they came up for discussion. Judith was overwhelmed with the "ridiculous amount of reading," which was "going in one ear and out the other" (Judith, First interview). Judith came to the course with an undergraduate degree in psychology; Marshall was teaching in the content area. Judith was taking two courses and working full time. Marshall was taking one course and working part time. Thus, Judith was hesitant to critique Marshall's assertions. I inquired about the possibility of her asking Marshall questions, and she replied that she wanted to post in a way that reflected her knowledge, not her ignorance.

Of the five students I studied, Marshall was the only one who shared Garrison et al.' s (2000) and Brookfield and Preskill's (1999) understanding of the role of discussion in education, therefore, his experience and understanding of the conference is important. I will describe that here. His early posts were carefully constructed arguments that invited critical feedback from others. If others posted before he did, his messages addressed the assumptions others were making and identified weaknesses in their reasoning or evidence. Unfortunately, as Judith observed, others either ignored him or conceded his points without reason or justification: "Good point, Marshall" was the type of token response he would receive. Initially, Marshall tried to correct this situation with a public plea:

> I find the general tone of politeness at any cost to be somewhat disconcerting. I would prefer that people challenge me on my ideas; it helps me to re-evaluate and often I can incorporate new ideas into my thinking. Done constructively, criticism can be a very powerful means for intellectual growth. (Marshall, Week four, Group Two's working space conference)

Nonetheless, the nature of the discussion did not change. As the weeks unfolded, Marshall appeared to withdraw from this process and focus on his own compositions.

During the weeks when he was still trying to foster a critical discussion, Marshall exchanged a series of messages with Ruth that represent a rare instance of mutual critique in the conference. Upon its conclusion, I asked Marshall to read through the exchange and comment on what had happened. His comments illustrate two of the problems that Judith identified. (*I present the sections of the transcript that Marshall is reading in italics,* and his comments in regular font):

> *Marshall,*
>
> *I'm really dismayed at your perception of what I meant by authority in the classroom. I have seen many a young teacher and substitute teacher come into the classroom with the idea that he / she will be a friend to the kids* which is not what I said *and there will be a democratic classroom where everyone will have equal rights* which I never said. So it's kind of interesting that [Ruth] basically took what I said and turned it upside down. Its almost like she was a little upset at me. That's my feeling. And then basically I tried to bring the temperature down a bit in my last post, and she didn't respond after. I left it off after that because basically she took parts of my messages and misrepresented them and because I thought we were getting into, uh, just nitpicking. I didn't see any reason to continue, so I dropped it. (Marshall, Second interview)

My reading of the exchange was consistent with Marshall's. His analysis supports Judith's observation that students can interpret alternative perspectives as attacks—

and respond in kind. Marshall talked about "smoothing [Ruth's] ruffled feathers because [he] saw her as a person who was very angry" (Marshall, Interview 2).

Marshall's comments also support Judith's observation that students are not always looking for alternative perspectives. In this particular exchange, Ruth held fast to her position and continued to reassert her original argument in various phrasings, perhaps thinking that if she could find the right phrasing, Marshall would finally get it. It was my sense that he correctly understood her position immediately, but disagreed with it.

When I interviewed Ruth about the exchange, it seemed to me that she was still stewing. She brought up the exchange with Marshall before I could get to it and expressed her irritation. At the time, she was relishing another student's disagreement with Marshall (on a separate topic):

> Somebody disagreed with Marshall point-for-point actually. I'm surprised you didn't notice, that you don't want to talk about that instead. In that exchange, somebody really analyzes what Marshall had posted and they call him on a number of points, point-by-point. You know, Marshall thinks education should be for self-actualization, and this other person was pointing out that most people go to school to come out with a job at the end of it. They really took him to task on that! (Ruth, Second interview)

Ruth seems to interpret these types of exchanges as win-lose competitions, not as wonderful opportunities to sharpen her thinking as Garrison et al (2000), Brookfield (1996), and Evans and Nation (1986) prescribe. I asked Ruth to read through and comment on the same section of the transcript of her interaction with Marshall. In the same manner as he, she argued that he misinterpreted her position, she accused him of taunting her, and she concluded with another insight on the experience of critical discourse:

> I really thought he was being quite patronizing there. And then (laughs) he didn't like my Lord of the Flies allusion. Marshall doesn't think that society will immediately breakdown if authority is not present. Well I'm sorry Marshall, I think it would. (Laughs). That was my response. And then he didn't respond to that. But you know if he had I wouldn't have carried it on because we obviously would never have come to a consensus there. So, I answered him back, but he didn't respond. (Ruth, Second interview)

In fact, Marshall did respond, but I think it was important for Ruth to feel like she had the last word.

One understanding on which Ruth and Marshall agreed was that the discussions have time and space limitations. With one discussion occurring for the entire group, in a one-week duration, she and Marshall quickly began to worry they were dominating the forum inappropriately. They also felt like they needed to move on to other tasks. The due dates for their assignments were approaching, next week's discussion was imminent, and they needed to prepare by completing the associated readings.

This experience of computer conferencing is interesting because again it contradicts objective descriptions of its attributes. Often, we argue that computer conferencing is a better venue for substantive discussion than the classroom because it eliminates problems with holding the floor and turn taking. This was not Ruth or Marshall's experience of computer conferencing.

If the other students were participating at least vicariously in these one-to-one exchanges, they might still be valuable. However, the exchanges tended to be regarded as private. During the Ruth-Marshall exchange, for instance, the other students were silent until finally Judith posted. Her message was on a new topic. I asked her why she didn't get involved in the debate, and her answer was pragmatic: she was busy that week, and she did not have much to add. I heard this comment in several of my interviews. Ruth offered a similar explanation for her lack of participation in an exchange that Marshall (ever contentious) was having with Jacques:

> I have to confess I didn't really pay full attention to the views of the other students. I felt it was someone else's conference and my job was to answer one question, not to respond to other people. I only had a limited amount of time that week. Maybe if someone had said something that really struck me as interesting or wrong I might have joined in. (Ruth, Email correspondence, March 15, 2004)

Jacques too was pressed for time. In our first interview, he described a particularly illuminating series of posts, and I asked if he got involved: "I haven't had a chance to,' he began. "It's too mind-blowing! (Laughs):

> In order for me to make good quality responses, it would take me a page online, so I'd have to go back and actually read up again. I just

> thought, "these are superb posting that these guys did," but I just left it at that and I sat back, lingering in thought, thinking "Interesting." Eighty-percent of the things I'd like to say, I don't have time to actually post (Jacques, First interview)

Several researchers have confronted similar reports from students. Pena-Shaff et al.'s (in press) students characterized conferencing as a time consuming activity, and they said the lack of time "was a reason for not participating more actively, even when they enjoyed the discussions" (np.).

In a rare instance of debate that did not involve Marshall, but rather Saul and another student, Marshall explained his non-involvement by characterizing the exchange as "silly" (Marshall, Third interview). My reading of the exchange was that it was relevant to the text they were studying and substantive.

It is important to understand Jacques' experience because like Marshall, he began the course with a view of discussion that is similar to Brookfield and Preskill's (1999) and Garrison et al.' (2000). Unfortunately, something about his experience of the computer conference changed his view. I relate some of that experience in the following paragraphs.

In the early weeks when the students had finished studying the Middle Ages and moved on to the Enlightenment, Jacques wrote a post-colonialist interpretation of the dangers of Enlightenment values. Marshall, who in many ways embodies the spirit of that age, challenged him. Jacques conceded Marshall's point in his response. I was curious as to why, and he wrote me the following email:

> Despite my vociferous views, I voiced agreement with Marshall's post. I did this to honestly acknowledge Marshall's perspective. In reading his post, I empathized with his perspective, detached myself from my beliefs, and briefly experienced the validity of his viewpoint. Marshall truly taught me to remain open minded and to explore other realities. I wanted to validate that with him. As this course progresses, I can more clearly acknowledge and appreciate the intellectual and personal diversity of the participants. (Jacques, Second interview)

Like Marshall, however, his attitude changed as the weeks progressed, and when we revisited the exchange, Jacques commented, "In hindsight, having an intellectual disagreement with anyone in this theory course seems naively ill-conceived on my part" (Jacques, Third interview). His explanation supports the view that some of the students, unlike him, were not interested in other's perspectives or in changing their own.

Jacques, however, thought he had found a method to engage these students. It is a method of dialogue that is unlike the one advocated in socio-cognitive theories:

> There's one student whose opinion, I think, is entrenched. He has some very strong ways of seeing things. If I wanted to change the way he saw the world, it would be like if I wanted to catch a goldfish. I wouldn't ram my hand into the goldfish bowl and try to grab it and take it out of its captivity. A better approach would be to gently put my hand in the water, let it acclimatize slowly, then put my hands around the goldfish and slowly lift it out. Similarly, I'm hoping that by posting

> as I have, that student's worldview will shift on its own. Maybe by the summer, what has happened will hit him. (Jacques, Second interview)

When Jacques refers to "posting as I have," I recall that his posting was characterized by interpretations of course texts through his experience. Typically, he presented some anecdote from his life that illustrated a concept from the readings. In some other interaction analysis schemes, his messages would be categorized somewhat pejoratively as "sharing and comparing" (Gunawardena et al., 1997), "exploration" (Garrison et al., 2000), "exchanging views" (Brookfield & Preskill 1999) or "opinions" (Evans & Nation, 1989). In these systems, it is positioned, respectively, as the lowest form of knowledge co-construction, critical discourse, discussion, or sustained argument.

Though disparaged, it is these categories of messages that dominate observational reports of computer conferencing. Consistent among these reports is the virtual absence of mutual critique. The relative presence of this type of conference participation, and the experiential problems with mutual critique that the students in my case study described, provide a serious challenge to the conceptualization of computer conferencing as, at its most valuable, a site for critical discourse.

I began this chapter by describing the types of activities in which the students engaged, the outcomes they associated with their activities, and the accounts they offered to connect the two. I then compared these accounts of computer conferencing with accounts offered in the distance education literature. I focused on two competing models, the social and cognitive constructivist models. Though these models have received little empirical support, they continue to have a strong influence on the way we conceptualize computer conferencing and its role in post-secondary distance education, the way we deploy computer conferencing in our courses, and the way we design our research. In this chapter, I tried to accentuate the gulf between the formalisms offered in our literature and the experiences of five students. In this effort, I join authors such as Burbules and Bruce (2001) who noticed a similar gulf, albeit in the context of discussion in K-12 classrooms. Justifications for the use of dialogue in teaching, they argue:

> Tend to arise from a priori assumptions that may or may not have been tested against studies of pedagogical practice. As a result, the prescriptive tradition has often neglected the ways in which idealized forms of interaction either may or may not be feasible in certain circumstance, or may have effects contrary to their intent. It may seem ironic that [the role of discussion in learning] has been discussed in ways that ignore research, but the philosophical origins of this concept, its prescriptive intent, its idealized characterizations, have all tended to promote an anti-empirical approach toward elaborating what dialogues look like and how they work—or fail to work—educationally. In general, there has been a desire to insulate the prescriptive model of dialogue from the conflicted rough-and-tumble of discourse generally. (p. 431)

To account for the gulf between my students' activity and the activities prescribed in models, I suggested that the models of computer conferencing put too much stock in the objective attributes of the medium and not enough stock in the subjective experiences of the students. In the final chapter, I build on this information to provide suggestions for practice and subsequent research.

Chapter 6: Discussion

When computer conferencing was first introduced to post-secondary, distance education settings, I and several others took up Mason's (1992) suggestion to analyze the content of conferences to assess student learning, evaluate the technology, and develop a deeper understanding of teaching and learning (e.g., Ahern, Peck, & Laycock, 1992; Blanchette, 1999; Bullen, 1998; Craig, Gholson, Ventura & Graesser, 2000; Fahy et al., 2000; Garrison et al. 2000; Hara et al., 2000; Henri, 1991; Howell-Richardson & Mellar, 1996; Kanuka & Anderson, 1998; Martunen, 1997; McDonald, 1998; Mower, 1996; Newman, Webb, & Cochrane, 1995; Rourke et al., 1999; Weiss & Morrison, 1998; Zhu, 1997). Few of us however have asked the students for their analysis of the conference messages, their interpretations of others' messages, and their experience and understanding of what is happening and what they are doing. "Why should we?" asked Becker, Greer, and Hughes (1995) in a classic educational case study:

> We should study students' views of their own experience because it is the best way to find out what influences those features of student behaviour we are interested in. If we do not see it as they do, we will not understand what they do. (p. 2)

The purpose of this study was to examine participants' experiences and understandings of online discussion. To do so, I read along with a 15-week computer conference that was a central learning activity in a graduate-level humanities course offered at a distance. During that time, I telephoned and emailed five of the participants periodically to discuss what was occurring.

I begin this chapter with a brief review of my findings. I return to two issues that I featured in my introduction: What are the students' experiences and understandings of learning through online discussion? and, Why are processes such as critical discourse and collaborative meaning making so rare in conferences when ostensibly these processes justify the inclusion of computer conferencing in post-secondary distance education courses. Next, I address problems in two prominent and competing models of computer conferencing, and I suggest ways to deploy these models successfully. After I identify some of the limitations of this study, I conclude with suggestions for subsequent research.

Students' Experiences and Understandings

The five students and I each had different understandings of what was happening in the conference. Like others who have tried to make sense of these settings, I found "it difficult to generalize about the role of computer conferencing in learning due to the individual characteristics of the learners and their unique situations" (Pena-Shaff & Nicholls, in press, np.). Saul was an enthusiastic participant who checked the conferences and contributed messages daily. In our interviews and email exchanges, he convinced me that he treasured the activity; however, I was not able to coax a reason from him that was specific and clear. When I pressed him, he responded vaguely:

> I am not certain that there is anything that stands out for me in the conference area other than the entire experience has been a positive

> one. If I think of one before the interview, I will let you know. (Saul, Email correspondence, March 24, 2004)

He did not think of one. I found Saul's posting desultory, but not all of the students agreed.

Ruth participated obligingly. To the final weeks, she remained unconvinced that the conference enhanced her experience. I thought her process of interpreting the readings through her experience and articulating these carefully in her postings would have been a rewarding learning activity. Ruth thought otherwise, and she insisted on more than one occasion that she was only participating because she had to. Regrettably, she told me in our final interview that she would not be continuing in the program.

Like Saul, Jacques stressed his appreciation for the conference. Frozen data lines and lost messages did not deter him. He told me once that he chuckled to himself imaging others reading his messages. Like Ruth, he responded to the posting requirement as an opportunity to interpret his experiences through the readings.

Marshall was my favourite. Two of our three interviews went longer than I promised in the letter of informed consent. Both times my tape ran out, and we continued to talk. Marshall had a background in the course subject, he received and read the course texts months before the start date, and as a substitute teacher, he was able to dedicate more time to his studies than the others. The sophistication and intensity of participation that these factors afforded overwhelmed the other students. They rarely took up the arguments that he crafted carefully, and they did not always pick up on the subtleties of his ideas. Marshall became disenchanted with the conference early on and turned inward. He continued to articulate thoughtful messages but was blasé about whether he posted them or not. For him, the valuable part of the conferencing activity ended when he finished composing his message.

Judith had an unusual take on the value of participating in the conferences. Looking outward rather than inward, her participation was designed to enhance the others' experience more so than her own. From beginning to end, her messages were composed of praise, compliments, and encouragement for others. Whether or not this enhanced the other students' experience depended on whom I talked to and at what point in the conference I talked to them.

What struck me most forcefully during my data collection and analysis was the uniqueness of each student's experience. As we reflected on each other's understandings, however, we were able to identify some commonalities. Focusing on the benefits of participating in the conference, the students identified six types of outcomes: 1) They gathered supplemental information, 2) changed their perspectives, 3) discovered and clarified their ideas, 4) imbued the content of the course with meaning, 5) developed feelings of camaraderie and empathy, and 6) completed the course on schedule.

The students associated these outcomes with certain types of activities. There were two general types of activities in which the students engaged, and I referred to these as 1) nurturing a warm environment and 2) addressing the intellectual content of the course. Divisions such as this one are a common finding in communication studies (e.g., Bales, 1950; Daft & Lengel, 1984; Keisler, Siegal, & McGuire, 1984; Rafaeli, 1986; Rice & Love, 1987; Steinfield, 1986; Walther, 1992). The students went about these activities in various ways. Interspersing messages with praise, encouragement, and recognition was a common way to approach the climate-setting activities. Three ways in which the students address the intellectual content of the course were 1) presenting arguments, 2) engaging in discursive explorations, and 3) making connections between ideas and personal experiences.

On whole, the impressions that these five students' formed seem more favourable than some who have been interviewed and observed. Their impressions were more favourable, for instance, than Pena-Shaff's et al.'s (in press) students:

> Pre-course expectations about the learning value of online discussions were not very optimistic, and post-course perceptions were even less positive. At the beginning of the semester, 30% of the students resented being required to participate in the computer conference, and 26% did not expect it to be very useful for their learning. At the end of the semester, 51% of the students did not view the online discussions as an efficient learning medium, and 45 % resented the participation requirement. In addition, many felt that it did not make any difference (19%) or that its use was not very helpful (35 %). (Pena-Shaff et al., in press, np.)

Among the five students I spoke with, only Ruth seemed to be this downbeat about computer conferencing.

The contradictory evaluations offered from student-to-student and from study-to-study are not surprising. Research on student satisfaction and perceived learning with computer conferencing does not yield consistent results (e.g., Davidson-Shivers, Tanner, & Muilenburg, 2000; O'Reilly & Newton, 2001; Sturgill, Martin & Gay, 1999; Wilson & Whitelock, 1998). Among these studies, the variables proposed most often to account for different assessments can be grouped under three general headings: 1) course design, 2) instructor style, and 3) student characteristics (Althous, 1997; Ellis & McCreary, 1985; Fang, 1998; Hawisher & Pemberton, 1997; Heller & Kearsley, 1995; Heimstra & Sysco, 1990; Hiltz, 1990; Irvine, 2000; Jiang & Ting, 1998; Koschmann, 1996; Mason, 1992; Ruberg, Moore & Taylor, 1996; Smith, 1994; Tergan, 1997; Tolmie & Boyle, 2000; Wolfradt & Doll, 2000).

The fact that participants' experiences of computer conferencing differ between and within settings is a common and important finding of empirical studies. Equally important is the recurrent finding, reflected again in my study, that the participants' experiences differ from the models of computer conferencing presented in the distance education literature. That is, a) the features of the communication medium that participants attend to are different sometimes from the features that theorists attend to, b) a somewhat different set of deterministic relationships between these features and participant activity is discussed by theorists and students, and c) the types of activities that the participants engage in most frequently are not the type prescribed by theorists. I take up the differences between experiential and formal analyses of computer conferencing in the next section.

In my literature review, I examined several accounts of the role of interaction in teaching and learning. I narrowed my study to two broad models of the role of computer conferencing in post-secondary, distance education. One model, epitomized by Garrison et al. (2000, 2001), envisions students engaging in critical discourse with their peers as a means to higher order learning. In their 2001 paper, they articulate this vision clearly:

> For a computer conference to serve as an educational environment it must be more than undirected, unreflective, random exchanges and dumps of opinions. Higher-order learning requires sustained critical discourse where dissonance and problems are resolved through exploration, integration, and testing. (Garrison et al., 2001, p. 15)

The other model of computer conferencing, epitomized by Gunawardena et al. (1997), envisions students engaging in collaborative meaning making as they share and negotiate interpretations of course materials. They explain:

> Knowledge is generated through social intercourse, and through this interaction we gradually accumulate advances in our levels of knowing. We construct meanings actively and continuously in a social context. Conversations are sites for negotiation of meaning and conceptual delimitations. (Gunawardena et al., 1997, p. 234)

Neither of these models captured completely the experience of the five students I observed and spoke with in this computer conference. Nor have they captured the experiences of many students who have been studied over the years. The dominant impression of the computer conference formed by the participants and me was neither as a forum for mutual critique nor as a forum for collaborative meaning making.

Some people with whom I have shared these results, including influential figures in the field of distance education, are unconcerned. "Maybe the models are wrong, but so what?" was one response I received during a discussion of my study. This is a question that caught me off guard, but I have since given it much thought.

First, like Garrison, I feel that models should play a role in guiding research and practice in distance education as they do in other fields (personal communication, June 1, 2005). But, that is not the main reason these results concern me.

Second, I feel that some space in the complex field of distance education should be dedicated to research that examines the fantastical claims of software marketers, electrical engineers, and computer scientists who continuously try to co-opt our agenda (Cuban, 2001; DeCastle, Bryson, & Jenson, 2002; Noble, 1998; Oppenheimer, 2003). But that is not the main reason either.

My main concern with the mounting evidence that the prominent models of computer conferencing's role in post-secondary distance education have important weaknesses originates in a report by Eastmond (1995). In the early nineties, Eastmond conducted a study that was like mine in most regards: It was a qualitative case study of adult learners enrolled in a distance education course engaged in computer conferencing. Within his monograph, he presents an anecdote about one of his participants arriving home from work late in the evening. Ignoring his wife and kids who have been awaiting his arrival, and passing on dinner, the participant descends into his unfinished basement. In the gloom of his damp, concrete recess awaits the monochrome monitor and the screeching modem characteristic of the networked computer circa 1993. Here Eastmond's participant sits night after night completing the participation requirements in his course's computer conference.

By the time I read this anecdote, I had published a couple of studies of computer conferencing, and I was aware of the equivocal nature of its efficacy in enhancing a distance learner's experience. I empathized with the student (and his family), and I thought it was careless and unjust to put students and their families through this type of ordeal without some sort of defensible rationale.

Others are concerned too. Garrison and Gunawardena for instance identify results similar to mine as a "serious problem" and conclude their studies with requests for subsequent researchers to explore the lack of, respectively, critical discourse and collaborative meaning making in the conferences, and ultimately to improve upon their models (Garrison et al., 2001; Gunawardena et al., 1997). Both groups of authors see the purpose of their models as guiding practice and research; therefore, the constructs and the processes they propose are consequential. My study arose in part as a response to these requests.

Some practioners, too, are concerned with these results. While presenting at faculty workshops, I have noticed some attendees are relieved to hear that other instructors experience difficulties engendering critical thinking or collaborative meaning making in their computer conferences. Moreover, as Mason and Romiszkowski (2004) have established, practioners are becoming sceptical and weary of the evangelical rhetoric associated with computer conferencing, and they are anxious to find out how the technology can actually be used to enhance teaching and learning.

Garrison and Gunawardena were among the first to observe and comment on problems with computer conferencing. In their own empirical studies, they have been frustrated with the lack of critical discourse and collaborative meaning making outlined in their models (Duphorne & Gunawardena, 2005; Garrison & Cleveland-Innes, 2005; Garrison, et al., 2001; Gunawardena et al., 1997). Searching for explanations, Garrison et al. speculate about deficiencies in four areas: 1) the moderation, 2) the medium, 3) the course content, and 4) their model. They touch on each of these concerns in the conclusion to their 2001 study:

> It is hard to explain the virtual absence of messages associated with critical discourse. There may have been deficiencies in facilitation in terms of guiding and shaping the discourse. Or, it may be that computer conferencing does not support this kind of activity. Critical discourse is difficult in a face-to-face educational context, perhaps it is even more challenging in an asynchronous text-based communication environment? Finally, it could be that our model was not appropriate for framing the type of educational experience we observed. (Garrison et al., 2001, p. 102)

Researchers working with Gunawardena et al.'s (1997) model have experienced similar frustrations and have offered similar speculations about inadequacies in facilitation, the medium, and their model. Gunawardena et al.'s interpretation stands out:

> The results from the coding forced us to question both the validity of our model and its theoretical underpinnings. The predominance of messages at the lowest phases [of knowledge co-construction] made us question whether the forum had supported the construction of

> knowledge. The interaction was not unlike they type of informal interaction that takes place at breaks or during social activities. Informal discourse, though valuable, is not congruent with the active construction of knowledge. (Gunawardena et al., p. 427)

Theirs is not the only critique of the collaborative meaning-making model. At the conclusion of their study, Kanuka and Anderson (1998), for instance, offered:

> a number of possible hypotheses why the vast majority of interaction is at the lowest levels of collaborative meaning making. One is that the participants were limited in their communication ability due to the constraints of a text-only environment with no opportunity to convey body language or graphic illustration. Another explanation for the absence of the negotiation of meaning is that it is much easier to ignore or not respond to online messages that are incompatible with existing knowledge than it is in a face-to-face environment. Also, there was no subject matter expert to draw out and develop new concepts nor a teacher empowered to require participants to deal with issues. (Kanuka & Anderson, 1998, ¶ 53)

Subsequent research has found support for many of the suppositions of Garrison et al. and Gunawardena et al. concerning the lack of critical discourse and collaborative meaning making in computer conferences. Special attention has been directed toward the role of the moderator and the validity of the models. I will take up both areas of research in the next section.

Problems in Discourse Facilitation

The role of a moderator in online discussion is perhaps the most written about topic in this domain. Dozens of authors have written about the roles and responsibilities of a successful facilitator. The bulk of this writing has been classified as *opinion* or *position* papers by the Educational Resource Information Centre (Berge, 2002; 1998; 1995; Berge & Collins, 1998; Berge & Muilenberg, 2000; Garrison et al., 2000, De Verneil & Berge, 2000; Heimstra, 1994; Paulson, 1995; Winograd, 2002), but a few researchers have systematically observed conferences and talked to participants about the moderator's influence (Aviv, Erlich, Ravid, & Geva, 2003; Berge & Collins, 2000; Mahesh & McIsaac, 1999; Salmon, 2000; Shea, Swan, & Pickett, 2005; Shea, Fredericksen, Pickett, & Peltz, 2003; Shea, Pickett, & Peltz, 2003). Shea, for instance, led a series of studies in which he and his colleagues studied Garrison et al.'s suggestions for facilitating conferences (Shea et al., 2005; Shea et al., 2003a; Shea et al., 2003b). They consistently found a positive correlation between the quality of facilitation, student satisfaction, and student perceptions of learning. Unfortunately, they have not designed studies that examine the relationship between moderator behaviour and student activity (rather than student outcomes). It would be interesting to see if the moderator is able to bring out the types of activities (i.e., critical discourse), that Garrison et al. argue is essential to learning in this medium. Aviv et al. (2003) designed such a study that focused on Gunawardena et al.'s model. He compared a highly structured conference—one in which a tutor carefully directed students through a series of analytical stages—with an unstructured conference—one in which there was little guidance from the tutor. In the structured conference, the students' conferencing activity was enviably distributed throughout Gunawardena et al.'s (1997) five phases of collaborative meaning making. In the unstructured conference, the entirety of student activity was categorized in the lowest phase of collaborative meaning making—sharing and comparing information. These findings and the reflective suggestions of dozens of distance educators suggest strongly that skilled and energetic moderators play an important role in facilitating critical discourse and collaborative meaning making.

The instructor in my study did not see his role in the conference as a discussion moderator or facilitator. His extensive reading of adult education literature contributed to his view that student discussion would work best if it were free of the dominating and directive presence of an instructor. The notion of an authority or subject matter expert is incompatible with this framework. A principal theme of the course, developed in several of the readings, was the notion of intellectual independence, responsibility, and maturity. During its 15 weeks, the course covered movements in thinking from the Dark Ages, through the Enlightenment, to post-modernity. The narrative layered atop this journey was the growing responsibility of human beings to think for themselves and to justify their thoughts and behaviour. Reflected in the title of one of the course texts, The Search for Authority (Bonnycastle, 1996), the curriculum follows the loss of authority in the Roman Emperors, the Roman Catholic Popes, and scientists, and encourages students to fill this void with their own substantive and justified thinking. A conference in which the instructor played the role of subject matter expert would be inconsistent with this theme.

Themes of authority, surveillance, and power were antithetical to the course themes, and the instructor set up the conferences in a manner that reflected this. His participation was marginal; however, it is important to emphasize that the instructor was not lazy or negligent. Each of the five students commented on his availability and responsiveness via email, about the remarkably quick turnaround times on submissions, and the copious amount of commenting he added to their assignments.

Throughout the 67 separate conferences that occurred across the 15 weeks, the instructor posted just slightly more than once message per week. In the influential Anderson, Rourke, Garrison, and Archer (2001) taxonomy of online discussion-moderation, his messages would be classified predominantly as *instructional design and organization*. Included in this particular set of responsibilities are "setting curriculum, designing methods, and establishing time parameters" (¶ 21). The following message, which appeared at the beginning of a conference week, was typical:

> Group 1, your reading is: The Nemesis of Byzantine Power, pages 123-132. If your group arrives at its answers before Friday, you can of course post them sooner. (Instructor, Week 1, Group 1's Working Space Conference)

There were three occasions on which the instructor broke from this convention: 1) when the discussion touched on one of his preoccupations, 2) when the discussion was in danger of veering way off track, and 3) when one of the students posted a message that explicitly contradicted an important theme of the course. On these occasions, he offered a modicum of what Anderson et al. (2001) might regard as *direct instruction*. This category includes efforts to "diagnose misconceptions, focus the discussion on specific issues, and confirm understanding through assessment and explanatory feedback" (¶ 33). These occasions, however, were rare and brief.

In contrast with the literature I reviewed previously, many of the position papers that address the instructor's role in computer conferencing encourage instructors to limit their participation in the discussions (Boyd, 1996; Harrington & Hathaway, 1994; Hodgson & Reynolds, 2005; Whip, 2003). Building on the work of Flanders (1970) and Sinclair and Coulthard (1975), who have condemned the preponderance of teacher-dominated talk in classroom discussion, they construct computer conferencing as a forum in which learners can dominate the interaction.

This position is associated more strongly with the social constructivist perspectives of teaching and learning than the cognitive perspectives. As Zhu (1998) notes:

> many researchers have studied the role of *vertical interaction* in learning (idealized by adult-child or teacher-student interaction). But, others argue that the construction of knowledge through social interaction can be observed more often in *horizontal interaction* (idealized by peer-to-peer interaction). (p. 250)

For a variety of reasons, some more defensible than others, many instructors maintain a limited presence in their conferences. Pena-Shaff et al. (2001) observed a conference and reported, "during the 14 weeks, students contributed messages 247 times while the teaching assistant and the professor contributed only 11 and 2 messages respectively" (p. 49). Hara et al. (2002) studied a 15-week course in which

20 students were enrolled. The total number of messages posted to the conference was 271 with an average of 23 messages per week. Of these, the instructor posted two messages per week on average. Angeli, Nicos, and Bonk (2003) observed a conference in which 146 pre-service teachers used computer conferencing to discuss the experiences they were having during their practicums. The discussions were attended by nine *mentors*, including five instructors who were teaching the practicum, a professor of educational psychology, a field director, and two participants whose specific responsibility was to moderate the conference. Despite the unusually large number of potential facilitators, the authors describe the frequency of moderation and facilitation as "limited," noting that some discussions concluded without any participation from the team of facilitators (p. 37). Obscured in this data, which focuses on the relative posting frequencies of students and instructors, is the finding that it is not unusual for instructors to contribute only one or two messages per week.

Of the students I interviewed, only one bemoaned his instructor's reticence to provide continuous discourse facilitation and direct instruction. It was Marshall, a teacher himself, who drew a connection between the lack of moderation and the lack of critical discourse:

> I think there are flaws in the process that have to do with people's nature. One flaw is the politeness ethic. It seems like everyone is afraid that if they disagree with someone it will be a social catastrophe. [The instructor] should wade in here and remind us of the value of challenging each other's opinions. But, he's been very quiet. (Marshall, First Interview)

Anderson et al. (2001) refer to the type of moderating that Marshall is looking for as *facilitating discourse*, a category of responsibilities that includes "identifying areas of disagreement, seeking to reach consensus, and setting the climate for useful types of discourse" (¶ 27). Brookfield (1990) is sympathetic to Marshall's position:

> One of the most daunting and difficult (but essential) tasks of the facilitator is to set a climate for learning and to assist in the development of a group culture in which adults can feel free to challenge one another and can feel comfortable with being challenged. Without such a climate or culture, teaching-learning encounters run the risk of becoming nothing more than exchanges of entrenched opinion and prejudice, with no element of challenge or willingness to probe the assumptions underlying beliefs, behaviours, or values. It is useless to have a discussion in which the participants compliment each other, repeat public norms, and confirm prejudices but never address fundamental differences in philosophy or practice. What is valuable however, is the honest expression of differences, in an atmosphere where challenge and dissension are accepted as part of the educational process. (Brookfield, 1990, pp. 13-14)

Aside from this type of discourse facilitation, Marshall was also looking for some *direct instruction.* When I asked him how he would moderate if he were the instructor, he replied:

> I would be in the conferences. I think [our instructor] could be present a little bit more than he is. If I make a statement that is off track, I'd

> like to know about it. I'm a reasonably good thinker but darn it all I'm not going to be correct all the time. I'd like to see somebody else's perspective, and I have to look at the professor, the instructor, as the authority on the subjects that we're talking about. So, even if he said "why don't you look at…" and maybe give a quote or something, even that would be a big help. (Marshall, First Interview)

At that point in the course, it did not seem that Marshall had adopted the post-modern position on knowledge and authority that the instructor was trying to model and to communicate through the readings.

Judith's assessment of the role of a moderator in computer conferences seemed to be more in keeping with her instructor's. Like Marshall and me, she noticed his relative absence, but she explained how this could be a valuable approach to teaching and learning:

> [The instructor] hasn't provided a whole heck of a lot of input. Therefore it's hard to tell who's right and who's wrong in our postings. But then again, [the instructor] doesn't know everything. No one does. I'm sure that some of the students have come up with things that he wouldn't have thought of. If I go into a course thinking, "Oh, the professor's always right, and I'm just posting to for the sake of posting" then I'm not going to learn anything. Obviously [our instructor] feels that unmoderated conferences assist with learning more than professor-directed conferences. (Judith, Third interview)

Judith's view seemed to be consistent with the instructor's.

The other students, Jacques, Saul, and Ruth, did not speculate on the influence a more active moderator might have had on their conferences. Because active moderation was something that was not happening in the conference, I did not introduce it during the interviews. Another reason that I did not pursue this issue is that I did not have access to the areas in which the instructor was engaged earnestly in the types of activities that Anderson et al. (2001) associate with responsible good online teaching—the personal emails between him and the students, their phone calls, and his lengthy commentaries on their returned assignments.

In this section, I have noted the lack of critical discourse or collaborative meaning making in the conference I studied. One or the other of these processes is often the rationale for including computer conferencing in a post-secondary distance education course; therefore, I argued that its absence is troublesome. Seeking an explanation for its absence, I pursued a suggestion offered by proponents of these processes, Garrison et al. (2000) and Gunawardena et al. (1997). Garrison et al. argue that skilled facilitation is one of three legs upon which a valuable conferencing experience stands and point to its absence as a possible reason for disappointing conference results. A review of the literature revealed some links between skilled, energetic facilitation and student satisfaction. The latter was also linked in a limited number of studies with increases in critical discourse and collaborative meaning making processes among participants; however, empirical work in this area is far from complete.

In the next subsection, I examine Garrison et al.'s (2000) and Gunawardena et al.'s (1997) supposition that their attempts to model the role of computer conferencing in post-secondary distance education have been inadequate.

Problems with the Models

The attempt to model computer conferencing and its role in post secondary distance education is an ongoing process. Research and practice have not coalesced around any of the dozens of conceptual frameworks that have been proposed (e.g., Fahy et al., 2000; Garrison et al., 2000; Gunawardena et al., 1997; Henri, 1992; Hillman, 1999; Jonassen & Kwon, 2000; Marttunen, 1997; Murphy, 2000a; Salmon, 2000; Zhu, 1996). Some models, in particular Henri's and Gunawardena et al.'s, have been used more often than others by researchers in empirical studies (e.g.. DeLaat, 2001; Kanuka & Anderson, 1998; De Weaver, 2003; Duphorne & Gunawardena, 2005; Orteganao-Layne & Gunawardena, 2004; and Turcotte & Laferriere, 2004); however, each time the models are used they are criticized, modified substantially, and often abandoned. (Gunawardena et al.'s model, for instance, grew out of their dissatisfaction with Henri's model). The deployment of these conceptual frameworks across various authentic settings reveals the difficulty in modeling the key constructs, processes, outcomes, and relationships in teaching and learning with computer conferencing.

One of the problems with both sets of models is the central explanatory role given to objective attributes of the medium. A quick example is the widely accepted assertion that there is an advantageous relationship between the textual communication of computer conferencing and higher order thinking. In the larger field of technology studies, theorists who posit these types of relationships are referred to broadly as *technological determinists*—those who assume that user behaviour is determined by particular features of a technology, which in turn is regarded as an autonomous agent outside the influence of human beings (Surry, 1997).

A specific variant of this perspective emerged in the study of communication technologies. It was referred to as the *technological characteristics perspective* and, stated briefly, it applied the logic of technological determinism to explain the influence of media attributes on user behaviour (Fang, 1998). One of the central projects of this perspective was to rationally and efficiently match the properties of a medium to the characteristics of a communication task (Fulk, 1993). The most prominent theory to arise from this perspective, one familiar to students of computer conferencing, was Daft and Lengel's (1984) *media richness theory*. In an intuitively appealing argument, Daft and Lengel proposed that certain communication tasks (such as negotiating) require a fuller communicative repertoire (or *richer media*) than others (such as simple exchanges of information). Negotiations, they argued, should be conducted face-to-face; whereas meeting agendas should be exchanged via email.

The assumption that media attributes exercise a predictable causal influence on users' actions has been a central element in the construction of computer conferencing in the distance education literature. Unfortunately, there has been little recognition of the technological characteristics perspective and few attempts to leverage the research of communication theorists working in this domain.

Assumptions of the technological characteristics perspective are present in Garrison et al.'s (2000) and Gunawardena et al.'s (1997) models. Both assert, for instance, that the textual nature of computer-mediated communication prompts students to articulate their opinions precisely, carefully, and logically. They also suggest that the asynchronous character of interaction prompts students to deliberate thoughtfully over each other's contributions. In Garrison et al's (2000) words:

> A text-based environment has an inherent communications advantage in supporting critical discourse in a community of inquiry especially in comparison to traditional oral classroom interaction. One such advantage is that text-based communication provides time for reflection. For this reason, written communication may actually be preferable to oral communication when the objective is higher-order cognitive learning. Some of the literature does in fact suggest that written communication is very closely connected with careful and critical thinking (Applebee, 1984; Fulwiler, 1987). (Garrison et al., 2000, p. 90)

This is a clear manifestation of the technological characteristics perspective. It is important to note, unfortunately, that only one of the two studies to which Garrison et al. refer supports their claims. In a substantial review of the literature Applebee (1984) concluded that the preponderance of evidence does not substantiate a connection between written communication and higher order thinking. Garrison et al. continue:

> It is the reflective and explicit nature of the written word that encourages discipline and rigor in our thinking and communicating. In fact, the use of writing may be crucial when the objective is to facilitate thinking about complex issues and deep, meaningful learning. There is probably a connection between the use of text-based communication and the achievement of higher order learning objectives. (Garrison et al., 2000, p. 90-91)

This construction of the role of computer conferencing in post-secondary distance education is widely accepted (Feenberg, 1987; Harasim 1993; Harasim, 1990; Kaye, 1992; McComb, 1993; and Morgan, 2000), and it is repeated in Mason and Romiszkowski's (2004) influential overview of computer conferencing:

> The textual aspects of CMC, and in particular of asynchronous CMC, support the possibility of greater reflection in the composition of messages than is seen in any forms of oral discourse. This has implications for levels of learning. (Mason & Romiszowski, p. 398)

Adding a layer of evangelism to the technological characteristics perspective, Mason and Romiszkowski announce:

> Because computer mediated communication combines the permanent nature of written communication with the speed and dynamism of spoken communications, the possibilities for interaction and feedback are limitless. It is only the creativity, imagination, and personal involvement of participants that constrains the potential of online discussions. (Mason & Romiszkowski, p. 398)

One is reminded of Thomas Edison's claims concerning the dramatic effect that film would have on the American educational enterprise. One is also reminded that his predictions did not materialize.

In the situation I studied there was meagre evidence of causal relationships between the properties of the computer conferencing medium (textual, asynchronous communication), the characteristics of the communicative task (open-ended discussion), and the learning processes (critical discourse, collaborative meaning making) proposed by Garrison et al. (2000), Gunawardena et al. (1997), Mason and Romiszkowski (2004) and others (Feenberg, 1987; Harasim, 1990, 1993; Kaye, 1992; McComb, 1993; Morgan, 2000). The assumptions of the technological characteristics perspective, which underpin models of computer conferencing's role in post-secondary distance education, received equivocal support in my study.

Asynchronicity, for instance, did not lead mechanistically to reflection or deliberation among the students with whom I spoke. In their 15 week course, deadlines for assignments were impending, and the weekly conferences were winding up or down. For the adult students I studied, career and family responsibilities were always pressing. Thus, whether or not they had time to deliberate over another's post was influenced by factors other than this objective feature of the communication technology. Nor did communicating in text lead consistently to clear, articulate formulation of substantive arguments. I think of Saul's bewildering messages, and other students' assumption that he was writing down whatever came to mind.

This evidence, which contradicts the predictions of the technological characteristics perspective, would not surprise communication theorists. Media richness theorists encountered similar problems when they tried to garner empirical support for its claims (Daft, Lengel, & Trevino, 1987; Rice & Shook, 1990; Suh, 1999; Trevino, Lengel, Bodensteiner, Gerloff, & Muir, 1990; Trevino, Lengel, and Daft, 1987). Of the set of problems that continually confronted these researchers, one is particularly germane to the educational computer conferencing milieu: The attributes of media to which users orient and the characteristics of their communication tasks are not objective. Theorists, researchers, and users vary in their descriptions of the attributes of a particular medium and the character of communication tasks. Poole and De Sanctis (2004) comment on one aspect of this problem, the assumption that media attributes are objective:

> Theorists have tended to objectify communication technologies by treating them as independent of the user, and to decontextualize these technologies by ignoring the situations in which they are used. Objectification and decontextualization conceal the social nature of technologies. Continually bombarded by such discourse, we forget that users constitute and give meaning to technologies. Until applied by a specific user in a specific context, a communication technology or any technology is just dead matter. (Poole & DeSantis, 2004, 178)

Weick (1990) comments on the second aspect of this problem, the assumption that communication tasks are objective:

> Communication tasks are equivocal, subject to interpretation and reinterpretation in their implementation context. Task perceptions may well arise from social shaping within a work group. Groups create

> interaction structures for completing tasks, and these structures constrain communication patterns. Thus, task based patterns of this type are in part the product of interaction structures socially constructed by groups. Groups create social definitions of tasks and required interactions then serve to structure behaviour. The same social influence processes that produce convergence on the meaning of a communication technology and its use also produce convergence on task interpretations. Tasks are malleable social constructions, rather than fixed constraints that function as external controls on behaviour. (Weick, 1990, p. 944)

These arguments by Poole and DeSanctis and Weick suggest that the technological characteristics perspective is flawed because it allows researchers and theorists to define and measure the attributes of the medium and the nature of the communicative task instead of allowing the participants to do so. Adaptations to media richness theory incorporated new assumptions explains Fulk (1993):

> They began with the assumption that users' perceptions of a medium's characteristics vary across individuals. *Richness*, for instance, is taken not as an objective property of a medium but as socially constructed—through the statements by coworkers, vicarious learning, norms for how media should be evaluated and used, and social definitions of rationality. (Fulk, 1993, p. 412)

Within these modified frameworks researchers were able to account for more variance in actual settings than they had with earlier versions of media richness theory. Ultimately, communication researchers concluded that the technological characteristics perspective is a valuable tool for understanding media, but that it *overemphasizes* the objective and deterministic aspects of media. Communication theorists admit relationships between media attributes, task characteristics, and user activity, but they regard these relationships as emergent, contextual, and socially constructed. Social constructivist theorists offer *mutual determinism* in place of technological determinism.

Models of computer conferencing that are flawed under the assumptions of the technological characteristics perspective might benefit from a similar shift. A shift that recognizes the centrality of students' experiences of computer conferencing, their understanding of the nature of online discussion, and their situated construction of its role in their course might yield more insight into the roles of computer conferencing in teaching and learning.

In the previous paragraphs, I examined Garrison et al. (2000) and Gunawardena et al.'s (1997) supposition that weakness in their models might account for the lack of critical discourse or collaborative meaning making in computer conferences. I showed that in models like theirs, critical discourse and collaborative meaning making are regarded, in part, as artifacts of the asynchronous and textual nature of communication in computer conferencing. I reviewed some of the extensive body of research conducted by communication theorists which suggest that this assumption is overblown. A better approach to modeling the role of computer conferencing in post-secondary distance education, this research suggests, is to consider not only the properties that theorists or researchers ascribe to the technology, but also the properties that particular groups of participants have appropriated.

Garrison et al.'s (2000) and Gunawardena et al.'s (1997) suppositions for the lack of critical discourse or collaborative meaning making have been supported in several empirical studies. In the preceding paragraphs I have discussed these suppositions and presented some of the supporting literature. In the next section, I will review some of the insights that the five students provided into these issues. Reflecting on their understandings and the speculations of Garrison et al. and Gunawardena et al., I will make some suggestions for how critical discourse and collaborative meaning making might be engendered in post-secondary distance education settings. I will begin with the critical discourse model and move to the collaborative meaning-making model.

Stimulating Critical Discourse

The students offered several reasons for the lack of critical discourse in their conference. As I mentioned earlier, all of the students had families and jobs, and some were taking additional courses. Therefore, they did not have as much time as they needed to deliberate over each other's posts and to prepare thoughtful responses. Also, the differential amount of time available to the students gave rise to disparities in the students' capacity to discuss a reading knowledgeably.

Furthermore, critiquing another students' assertion was the least efficient strategy for satisfying the demands for participation in the conference. When they did so, these students proceeded with the knowledge that they might be committing to one or two more postings in response to a potential rebuttal. A much more efficient strategy involved posting opinions that were unrelated to others' messages, as was ignoring others' critiques of their opinions. These students found the computer conferencing medium particularly facilitative of ignoring or sidestepping others' challenges.

On the occasions that they were free to engage in a sustained dialogue, they quickly began to worry that others might see them as "hogging the floor"—an issue that we mistakenly think of as irrelevant in an asynchronous, textual medium (e.g., Harasim, 1986, 1987, 1990).

Further, few of the students were disposed to having peers critique their opinions, and they could get testy when others challenged them. Assertions were (actively) misinterpreted, communication broke down, and feeling of acrimony lingered.

A final issue that made critical discourse unlikely was the students' orientation

toward the computer conference. Marshall was the only student who understood the activity as a forum for mutual critique or critical discourse. Judith invited others to critique her messages in her introductory post, but she did not act in this way at any time during the fifteen weeks. Instead, she preferred to offer non-judgmental support to anyone who posted. Saul alluded to the lack of critical discourse in his first interview, but his manner of posting was far from what Garrison et al. would describe as exemplary. I found his postings to be more like stream-of-consciousness free-writing than measured argument. Nor did Ruth and Jacques appropriate the conference as a site for mutual critique. Their understanding of the conference was as a place to present personal experiences that related to the course topics. Confronted with this variety of orientations, even Marshall resigned himself to an alternate mode of discourse.

Suggestions for Promoting Critical Discourse

From these experiences, I can recommend some suggestions for those who are drawn to the critical discourse model of computer conferencing. Duffy, Dueber, and Hawley (1998) developed a conferencing system that compels students to participate in a circumscribed manner. In place of the generic options for posting a message offered by most conferencing systems (e.g., *post*, *reply*), their system offers options such as, *rebut*, *add evidence*, and *challenge assumption*. Jonassen and Kwon (2002, 2001) have studied the use of a similar system. The system, which they refer to as a *computer supported collaborative argumentation system* (CSCA), is designed to scaffold argumentation among students. It offers the following conversational ontology: *hypothesis*, *data*, and *principles*, along with *for* and *against*. When using this system, Jonassen and Kwon found that students were able to construct coherent arguments more often than students using a conventional, conferencing system (such as the one I studied). They analyzed students' interactions using Toulmin's (1958) familiar system of informal argumentation, and they found significantly more evidence of claims, grounds, and rebuttals among the CSCA group. Knowledge Forum™ is probably the most widely known effort to guide student interaction into a particular genre. Scardemalia and Bereiter's (1994) CSCA delimits student interaction to patterns that are characteristic in scientific research communities, including: *my theory*, *I need to understand*, *new information*, *this theory cannot* *explain*, *a better theory*, and *putting our knowledge together*. Dozens of studies demonstrate the efficacy of this product in the K – 12 settings for which it was designed (e.g., Scardemalia & Bereiter, 1994; Scardemalia, Bereiter, & Lamon, 1994), and similar work has begun in post-secondary settings (Teplovs, 1998; van Aalst & Chan, 2001; van Aalst & de Jong, 1997). Early work was conducted in this area by Lesgold, Lajolie, Bunzo, and Egan (1988) who developed an argumentation scaffold tool to assist in avionics troubleshooting. Like Jonassen and Kwon (2001, 2002), they found the quality of the trouble shooters' problem solving process was greatly improved by the tool; moreover, the number of problems that they successfully solved increased.

A CSCA system might unite the multiple orientations that students have toward conference participation, and it might make the expectation for critical discourse explicit. The constraints to posting might also discourage the students from sidestepping challenges to their opinions.

However, a CSCA system might enflame the unproductive quarrelling that broke out occasionally. In response to this, as I discussed earlier, a perennial suggestion in the literature has been the need for skilled and energetic discussion moderators or facilitators (Anderson et al., 2001; Berge & Collins, 2000; Heimstra, 1994; Lyndsay, 1998; Salomon, 2000). Of course, this suggestion must be balanced with concerns for the onerous demands that responsible facilitation imposes on the time and workload of the instructor.

A difficult challenge for instructors to address will be the amount of time that is required for critical discourse to run its natural course. In the course I studied, the computer conference was layered atop the regular assignments and activities of a distance education course. This yielded a model of course delivery that combined the activities of a traditional correspondence course with a demand for continuous discussion. For this group of adult students with careers and families, it was a difficult task. In addition to the conferencing expectations, the students were required to read three books, five articles, and compose five essays of a combined length of 6,000 words. The articles they read were dense and esoteric (e.g., Kant, Foucault), and the students told me they had to re-read them several times before they comprehended their meaning. Marshall reported spending five or six hours per day on the course during the days when he was not subbing. When I asked Saul how much time he was spending on the course, he related a conversation that he had with a friend:

> I have a friend, a guy like me in the same profession, and he's saying, "Look, I teach four nights a week, I teach all day Saturday and when I'm not teaching I'm looking after my clients. I don't have time." He's saying, "[The secretary for your program] says I need to put aside 20, 25 hours-a-week to do your course. And his friends, who are doing programs elsewhere, they're saying "that's ridiculous; they're trying to scare you. Don't worry about it." So he's throwing this at me and what I said to him is, "This course is pretty intensive. Very time consuming. 20, 25 hours a week is not unreasonable. I suppose if you wanted to put in fewer hours you could do that. But, I don't know what you're going to get out of it." (Saul, Third interview)

The model of correspondence course-plus-computer conferencing was challenging for this group of students. When they were forced to apportion their time, the assignments, which were assessed on their quality and substance, took precedence over their conferencing activity, which was assessed on the frequency of participation. Recall Jacques's comment:

> In order for me to make good quality responses, it would take me a page online, and to do that I'd have to go back and actually read up again. Eighty percent of the things I'd like to say, I don't have time to actually post. (Jacques, First interview)

Based on comments such as these, it is appropriate to ask instructors to reflect honestly on the conference's role in the course and their confidence in its efficacy. If they believe that the conference adds an essential element to the course, then it might replace other elements of the course instead of being added to them. If they are not confident that it contributes to the course goals, it should be removed.

I have one final observation for those who think that conferences should be sites for critical discourse. Of the few times when this type of interaction took shape, it was invariably on topics in which the students had some personal stake. Ruth, a retired teacher, and Marshall, a substitute teacher, argued about pedagogy. Jacques, married to a Cree woman and living on a reserve, argued with Marshall about post-colonial versus Enlightenment values. Saul, who championed Jewish issues throughout the course (whether they were a relevant topic or not), engaged in a protracted discussion with another student on the difference between Judaism and Semitism. Challenging other's opinions and interpretations is an uncommon process in the classroom. It requires effort as Jacques informs us, and it is difficult to accomplish successfully as Ruth and Marshall's exchange shows us. It should not surprise us that students are only willing to engage in this precarious and time-consuming activity when there is something personal at stake.

In the preceding paragraphs, I developed some suggestions for implementing the critical discourse model of computer conferencing. In the next subsection, I develop some suggestions for implementing the collaborative meaning-making model.

Stimulating Collaborative Meaning Making

Critical discourse was only a marginal element of the conference that I studied; therefore, I looked to social constructivist models of computer conferencing in search of a better understanding of my case. The insight these provided was also incomplete. As many others have, I found a large amount of sharing and comparing of information and opinions. Gunawardena et al. (1997) identify this type of interaction as just the beginning of the collaborative meaning-making process. I found little evidence of higher-level knowledge co-construction processes. Clark and Brennan (1991) offer the following axiom of communication, which may provide insight as to why:

> Once we have formulated a message, we must do more than just send it off. We need to assure ourselves that it has been understood as we intended it be. Otherwise, we have little assurance that the discourse will proceed in an orderly way. For whatever we say, our goal is to reach the *grounding criterion*: that we and our addressees mutually

> believe that they have understood what we meant well enough for current purposes. (p. 148)

While observing the computer conference and talking with its participants, it was not always clear that they were desperate for the assurance that their messages had been "understood as intended." It was equally unclear whether the students had the goal of achieving "mutual understanding." Many simply posted to get their participation marks, which unfortunately, seemed to be the overriding "current purpose." Thomas (2002) identified similar problems in the undergraduate computer conferences she observed. "Over half of students' contributions received no response," she begins:

> In fact, a significant proportion of the messages were never viewed by another person. In effect, the majority of messages were isolated and unrelated. There was little on-going development and exchange of ideas in any of the discussion themes. This incoherent structure of the messages is not compatible with a truly conversational mode of learning. From my analysis it is evident that the virtual learning space of the conference did not promote the interactive dialogue of conversation, but rather leads students toward poorly interrelated monologues. (p. 361)

To talk about the co-construction of knowledge or collaborative meaning making in computer conferencing in anything but a trite way, we need to take seriously the preponderance of evidence which shows that students rarely go beyond the lowest types of activities and outcomes described in social constructivist models of computer conferencing.

This prompts two questions: What exactly is meant by *collaborative meaning making*? and how, precisely does it occur?

Building on the work of ethnomethodologists, Schegloff (1991) dismisses the notion that knowledge co-construction means anything like separate minds with identical contents. Instead, he proposes a procedural understanding of meaning making by which actions and orientations are predicated on, and displayed as, oriented to knowledge held in common.

Proceeding from the work of Garfinkel (1967) and Schegloff (1991), Roschelle (1992) explains how social facts are accomplished and how meaning is made collaboratively in an educational context. He studied a pair of students working together to learn science concepts, and he concluded that "shared meanings are produced gradually through joint use of the meanings in situations that require progressively more constrained actions in order for attributions of shared knowledge to be warranted" (p. 211). Roschelle specified three constituent processes: 1) the construction of an abstraction, 2) an iterative cycle of displaying, confirming, and repairing understandings, and 3) the application of progressively higher standards of evidence of mutual understanding. In the conference that I studied, only the first two processes were evident. Composing messages provided students with an opportunity to construct an abstraction: When they posted these to the conference, they engaged in what Roschelle (1992) refers to as *displaying their understanding*. Unfortunately, this is where the collaborative knowledge construction process ended for many students, or more accurately, failed to begin.

In Roschelle's model, these displays should lead to a confirmation by others that they understand and accept the interpretation that has been displayed. Unacceptance or misunderstandings should be an occasion for repair. Savery and Duffy (1995) present a similar argument. There was little evidence of this in the conference that I studied; nor is such evidence found in computer conferencing studies on the whole. Typically, the percentage of conference messages that observers identify as showing any sign of interaction ranges from 10% to 25% (Berge, 1994; Blanchette, 2002; Bullen, 1998; Creanor, 2001; Davis & Rouzie, 2002; Fahy, 2002; Howell, Domingo, & Navarro, 2001; Lee & Gibson, 2003; McDonald, 1998; Tolley, 2000;Vrasidas & McIsaac, 1999). To put this more dramatically, approximately 75% to 90 % of messages show no outward signs of interaction. As Vrasidas and McIsaac (1999) observed: "Moderators rarely comment on students' contributions. It is rare that participants in the discussions comment on other participant's contributions. Students feel that responses to the moderators' questions are just postings that meet the requirements" (p. 91). Similarly, Bullen (1999) found:

> For the students I studied, the bulletin board metaphor, rather than a conference or discussion metaphor, was a more accurate description of the online activity. Students were unable to perceive the individual messages as part of a discussion and thus their ability to respond was hampered because for them there was no real discussion. The instructor did not consistently provide encouragement and redirection, and students rarely followed up each other's messages. (¶ 42)

I will resist the temptation to present dozens of similar descriptions and just report that observers often code the bulk of messages as non-interactive.

This is unfortunate. Addressing others' opinions and interpretations is a fundamental aspect of collaborative meaning making. As Ten Have (1999) notes, conversations with useful outcomes result from topics being sufficiently explored before they are changed. He calls this *chaining*, and says that it results from one or more interlocutors following up a question and its answer with additional statements and further topic related questions.

Often computer conferencing is included in a course with the intent that it will lead to collaborative meaning making and knowledge co-construction among students. Unfortunately, this outcome is rare. In subsequent paragraphs, I offer suggestions for facilitating these processes based on the results of my study.

Jonassen has identified ways to promote collaborative meaning making in computer conferencing (Jonassen, 2004; Jonassen, Howland, Moore & Marra, 2003; Jonassen, 1999; Jonassen, 1996). He suggests case based and problem based learning activities. When small groups of students work toward a unified solution to a case or a problem, they are not at liberty to side step others' interpretations. They are required to display their understandings and contend with those of others'. To reach a solution successfully, they must repair misunderstandings and resolve discrepancies. In the course I studied, the students were grouped during the first few weeks, but the activities they worked on were not the type that Jonassen recommends. Instead, they developed questions to pose to the other groups and produced papers.

Looking closely at the types of learning activities that underlie reports of computer conferencing, I found two common designs (Rourke & Conrad, 2004). In the most prevalent design, students engage in weeklong, whole group, open-ended forums. Consistently, this design is associated with low levels of participation and interaction and few instances of knowledge co-construction. In the second design, a whole class is divided into small groups of students who engage in purposive collaboration. This design is associated consistently with high levels of participation, participation that is predominantly interactive, and many instances of knowledge co-construction. Villalba and Romiszkowski (2000) report similar findings. They performed a comparative analysis of online courses and found that few emphasise collaborative, small-group learning. Most offered a relatively unstructured online group discussion. Assessing these courses, the authors conclude:

> There is little if any research indicating that such environments are conducive to in-depth reflective discussions of the type required to develop critical and creative thinking skills. And there are some studies that suggest they are singularly ineffective in this respect. (Villalba & Romiszkowski, 2000, p. 405)

Pena-Shaff's (2000) research sheds additional light on why small group purposive collaboration can be more valuable that open-ended, whole group forums:

> In the open forums, if one student disagreed with another, she/he could simply ignore the comment. The small group activity, however, required the students to reach some degree of consensus about their project. If they disagreed with someone, or felt someone else's

> argument was not well developed, it was more important for them to challenge or contradict them to ensure the presentation would be coherent. (Pena-Shaff, 2000, p. 64)

In the previous sections of this chapter, I reviewed the results of my study, described the students' experience of their computer conference, showed how these experiences differ from what we might predict based on two prominent models, and offered an explanation for why. I also offered suggestions for implementing these models successfully. In the next section, I discuss some limitations in my research methodology.

Methodological Limitations

The assumptions of social constructivism that underpin the meaning-making models of computer conferencing were also the assumptions of my research methodology. Not surprisingly, some of the barriers to collaborative meaning-making extended to my investigation, including time constraints, the lack of a genuine effort to build shared meanings, and the absence of a continued effort to display, monitor, and repair interpretations.

Time certainly was an issue for these students as the following responses to my requests for continuing interaction indicate:

> Hi Liam,
>
> This week I am hosting the conference for chapter 6, so I will not have any time for our exchanges. Immediately following this week I will be concentrating on my final paper. This, along with a full time job and

> family, is not going to leave any extra time. (Marshall, email correspondence, March 11, 2004)

> Hi Liam
>
> As you are aware, I have participated in hundreds of postings to a multitude of conference threads. With daily conference activity, two major papers to prepare for, not to mention a full workload, I haven't the time right now. It's not that I don't want to help, I think I have demonstrated that isn't the case. As you know, time is a precious commodity. (Saul, email correspondence, March 20, 2004)

Another issue I found disappointing was the students' disinclination to provide me with sections of the transcript that illustrated their points they were making. During our interviews, they said they would often be thinking of specific posts as they explained what was happening. Prior to one round of interviews, therefore, I sent out the following preparatory request via email:

> I will ask you if there is any specific conferencing experience that stands out so far. I think some students will talk about an experience that was particularly valuable, which is fine, but other answers are equally useful. If you want to identify this section before the interview so that I can read it over, that's fine. (Liam, email correspondence, February 11, 2004)

None of the students satisfied this request. I tried another tack that one of the students suggested:

> Some of the other students have proposed forwarding examples as they arise. Would that work for you? Would that be a way for you to share with me some example of what you described as [a particular type of posting]? (Liam, email correspondence, March 18, 2004)

Still, no one complied. When I prompted them one last time, I began to receive messages like this one:

> Hi Liam,
>
> I am not certain that there is anything that stands out for me in the conference area other than the entire experience has been a positive one. If however, I think of one before the interview, I will let you know. (Saul, Email correspondence, March 24, 2004)

Roschelle (1992) described the importance of displaying understandings to collaborative meaning making. Clark and Brennan (1991) also argue that some sort of display is essential to achieving common ground in conversation—something that all parties can point to, look at, or touch in order to identify what they are referring to. Though the students and I shared a transcript, I could not get them to use it in a manner that would ground our conversations. Thus, I was often left to infer what the students meant by particular types of posting. My effort to build shared meanings was not always reciprocated.

It is the collaborative co-construction of meaning that distinguishes social constructivist research from interpretivist research (Denzin & Lincoln, 1996). Moreover, it is this process that overcomes the problematic of representation for which other methods have been criticized (Schwandt, 1996).

Roschelle (1992) also noted that the achievement of shared knowledge occurs incrementally across several episodes as partners apply progressively higher standards of evidence for convergence. The four standards of evidence to which he refers, from lowest to highest are: 1) a smooth continuation of conversational activity into the next relevant topic, 2) a simple affirmative acknowledgement, 3) a verbatim recitation, and 4) a mutually acceptable elaboration or collaborative completion of a thought. Throughout my interviews and email exchanges with the students, the highest standards of evidence were not as prevalent as they might have been.

A technique that social constructivist researchers have developed to address this problem is *member checking*. In this process, a researcher presents his interpretation of an interview to a participant and asks the participant to comment on its completeness, accuracy, and appropriateness. I did this for each of the three interviews that I conducted with each of the five participants, but they rarely responded with more than a crisp approval:

> Hi Liam
>
> Nice report(ing)! I've highlighted 3 type-o's, but other than that, it looks just fine. (Saul, email correspondence, March 1, 2004)

> Hi Liam
>
> I apologize for getting back to you so late; I have been extremely busy. The analysis is fine. (Ruth, email correspondence, March 3, 2004)

> Hi Liam,

> I read the interview content that you sent, and your distillation of that interview is fine with me. I have no edits, please go ahead and use it as is. (Jacques, email correspondence, March 3, 2004)

Roschelle (1992) might regard these as low standards of evidence that a mutual understanding had been achieved. The assessment of my interpretation as *fine*, I take to mean *acceptable* in the sense that they may have found discrepancies but did not choose to correct them. This experience is common across the several qualitative studies I have conducted.

The preceding acknowledgements are different from the more useful feedback I received from Marshall:

> Hi Liam
>
> It looks pretty fair. However, I finished my BA in 1976. Also, I am not sure that "divine" inspiration would be exactly correct. If you are interested, you might have a look at <http://www.rosicrucian.org>. (Marshall, email correspondence, March 2, 2004)

I had made an important factual error in my report of Marshall's interview (I thought he graduated in 2000), and he corrected this error. More interestingly, he also objected to an interpretation that I added to his interview, and he referred me to a comprehensive explanation. Here is a verbatim report of what I interpreted as *divine inspiration*:

> I guess I'm a little different than some people. A lot of things that come to me come from within rather than from external sources. I

> synthesize things and I come out with—bang—inspirations. (Marshall, Second interview)

After he offered the correction, I returned to the interview and realized that I had misinterpreted what he said in an important way. I attributed an external source to his inspiration when he had been careful to specify that it was not. This instance of negotiation and the effort to repair misunderstandings made me realize that it was not happening consistently with the other participants.

In this section, I looked at some of the methodological limitations of my study. I noted that naturalistic studies like mine emphasize the co-construction of findings by the researcher and the participants, and I questioned the degree to which the participants were committed to these negotiations. I conclude this chapter with suggestions for subsequent research.

Suggestions for Subsequent Research

Throughout this chapter, I have offered suggestions for subsequent research. In this section, I provide a brief review of those and then I develop an additional suggestion about the methodology used to study computer conferencing.

Several of my suggestions concerned the soundness of our models. Our conceptual frameworks are not completely successful at accounting for outcomes and processes in particular settings or at modeling the experiences and understandings of particular participants. Many studies, in fact, present fundamental challenges to our existing constructions of this technology. They suggest that computer conferencing may not be dialogical medium through which students either 1) engage in higher order learning through critical discourse or 2) engage in knowledge co-construction through collaborative meaning making. Rather, some studies suggest that computer conferencing might best be construed as a monological medium that 3) allows students integrate their experiences with the content of their courses through reflection and composition (Hoadley & Enyedy, 1999; Chen & Hung, 2002; Pena-Shaff; Pena-Shaff, in press; Pena-Shaff et al., 2001; Pena-Shaff & Nicholls, 2004).

My intent at this point is not to argue for one model or another but to highlight the unsettled nature of our construction of this prominent educational technology. There are several reasons for refining these models. One is to provide a framework for implementing computer conferencing in a manner that enhances a learner's experience. For this to occur, additional research is needed.

Subsequent research on the first construction (i.e., computer conferencing is a medium through which students engage in higher order learning through critical discourse) will need to address the perennial concerns that my participants reiterated. If we want students to engage in critical discourse, we need first to understand how a facilitator can, as Garrison et al. (2000), Anderson et al. (2001), and Brookfield (1990) prescribe, identify areas of disagreement, seek a consensus, and set the climate for mutual critique. Second, we need to address the concerns about critical discourse that Judith raised. These concerns, which subsequent research could help us understand, are a) the students' indifference to alternative perspectives, b) their misinterpretation of counterproposals as personal attacks, and c) their propensity to ignore critiques while seeking congenial viewpoints. There are several impediments to critical discourse which researchers must explore if practioners are to successfully cultivate the types of processes and outcomes proposed by Garrison et al. (2000).

Subsequent research on the second construction (i.e., computer conferencing is a medium through which students engage in collaborative meaning making) will need to develop a better understanding of the knowledge co-construction process, particularly as it occurs in an asynchronous, text-based medium. These qualities of communication—asynchronous, text-based—are antithetical to many of the assumptions of the social construction of knowledge, and they are inconsistent with many of the conditions of the formative research in this domain. For instance, from the social constructivist perspective, knowledge is understood as a joint production (Schegloff, 1991). In this regard, it assumes a high level of synchronization between conversational partners. In this context, I use the term *synchronous* as in *synchronized swimming* in which every action coordinates, anticipates, and takes account of the other actors and actions in the system. The form of computer conferencing I studied, however, is inherently a-synchronous. Subsequent researchers may be able to determine whether a synchronous understanding (or joint production of knowledge) is possible in such a medium. Those who are most interested in how knowledge is socially constructed, ethnomethodologists and conversation analysts, assume that knowledge is produced and reproduced in specific contexts on a moment-by-moment basis (Schegloff, Roschelle, 1991; Clark & Brennan, 1991). Subsequent researchers should explore the extent to which distance education students, whose shared context is diminished, are able to construct situated knowledge, and whose communication is delayed, are able to produce moment-by-moment understandings.

Subsequent research on the third construction (i.e., computer conferencing is a medium in which students integrate their personal experiences and the content of their courses through reflection and composition), should draw on the extensive bodies of literature on writing-across-the-curriculum (WAC), journaling, dialogue journaling, and the psychology of written composition (Abdullah & Gilmore, 1997; Applebee, 1984; Bereiter & Scardemalia, 1987; Fisher, 1996; Fulwiler, 1980, 1986; Hawisher & Pemberton, 1997; Krol, 1998; McFarland, 2001; Mills & Ballantyne, 2002; Yeoman, 1995). Much of this research, however, focuses on lengthy written assignments or written interaction between a student and an instructor. Subsequent researchers might explore the role of brief, recurrent compositions and feedback among peers.

These suggestions for research will extend the usefulness of our existing models. Atop this work, we need to reconsider how our models our developed. I have argued that many of the assumptions of our frameworks are inconsistent with assumptions of current communication theories. One of my specific criticisms was that some of our models build explicitly on deterministic theories of ICTs such as social presence theory (Short, Williams, & Christie, 1976), media richness theory (Daft & Lengel, 1984), and information processing theory (Shannon & Weaver, 1948). I demonstrated that many theorists in the field of communication studies are moving beyond the assumptions embodied in these perspectives.

Two of these perspectives in particular offer intriguing possibilities for distance education researchers—adaptive structuration theory (AST) (Poole & DeSanctis, 2004) and technologies-in-practice theory (Orlikowski, 2000).

AST criticizes the deterministic and objectivist view of technology use and emphasizes its social aspects. According to Poole and DeSanctis (2004), groups that use an ICT such as computer conferencing in their work dynamically create perceptions about the role and utility of the technology. These perceptions vary widely across groups, they influence the way technology is used, and they mediate its impact on group outcomes. Reflecting the perspective of mutual determinism (rather than technological determinism), AST looks equally at the objective features (or *structures*) of an ICT and the structures that actually emerge as people use the technology in their everyday practices. By adopting this perspective, researchers might remove some of the inconsistencies between our models of the role of computer in distance learning and participants' experiences and understandings.

Technologies-in-practice theory (Orlikowski, 2000) continues the move away from deterministic understandings of ICTs begun by AST. This theory abandons almost entirely any interest in the objective features of a technology and focuses on the improvisational processes of groups as they appropriate a new communication technology. This perspective, like AST, could help subsequent researchers shift their attention away from features of computer conferencing that are salient to software developers, toward features that are salient to students and instructors.

Throughout this chapter and the last, I have argued that our conceptual frameworks need to be refined in a manner that brings their assumptions in line with current theorizing in related domains. Another suggestion I made for subsequent research is to investigate the importance of presenting students with a clear framework within which they are expected to work. Literature reviews conducted by a colleague and me (Rourke & Conrad, 2004) and by Mason and Romiszkowski (2004), and original research by Villalba and Romiszkowski (2000) and Kanuka, Rourke, and Picard (2005) indicates that learning processes and educational outcomes are influenced by the types of activities in which students participate in their online discussion (e.g., webquests, role playing, guest speakers, open-ended forums, case-based learning). Although the relationship between specific activities and outcomes is remains equivocal, Mason and Romiszkowski demonstrate persuasively that some type of rubric is beneficial to students who may have detrimental conceptions of how to participate in online discussion and how it can enhance their learning. Or, as I found in my study, without a clear rubric for participation, the students may have competing conceptions of what they and others should be doing in the conference.

Aside from these suggestions for topics of subsequent research, I will make a suggestion for methodology. I have been a researcher in several studies that employed post-positivist assumptions and designs. (Rourke & Anderson, 2004; Rourke, Anderson, Garrison, & Archer, 2001; Rourke, Anderson, Garrison, & Archer, 1999; Garrison, Anderson, Archer, & Rourke, 2001; Anderson, Rourke, Garrison, & Archer, 2001). These studies used a data collection and analysis technique referred to as quantitative content analysis (QCA). Using QCA, we segmented conference transcripts into units that were useful to us, categorized the segments into a pre-existing typology, and offered interpretations of the communication based on frequency counts of the units within the categories.

There are several problems with this technique, but the general issue is the dubious assumption that meaning is fixed and determinant. Eco (1979) provides a persuasive challenge to this assumption. He studied the information theory model of communication, and suggested some revisions. Notably, he argued that a sender's message is empty until the receiver fills it with content. Texts always contain blanks, Eco suggests, which only the reader can fill.

In my QCA studies, two "receivers" were engaged in the process of filling in the blanks contained in the texts—the conference participants and me, the researcher. I am persuaded by Eco's argument and recognize that two distinct interpretations were being constructed of conference messages, again, the participants' and mine. As Gadamer (1977) notes, "a text does not pop into the world as a finished and neatly parceled bundle of meaning. Rather, meaning depends on the situation of the interpreter" (p. 456). Thus, because the participants' situation and my situation are different, two distinct constructions arise.

The evidence of this is overwhelming. In QCA, two analysts or *coders* are required to read and categorize a transcript. Upon completion, they compare results and calculate a *percent agreement* figure to demonstrate to consumers of their reports that the analysis is not a reflection of the process that Eco (1976) and Gadamer (1977) describe. Ultimately, they want to convince readers that they too would arrive at the same categorizations. Until 2000, however, computer conference analysts rarely reported percent agreement figures (Rourke, Anderson, Garrison, & Archer, 2000). When they began to, the figures were not persuasive. In my experience, it takes much effortful collaboration, not independence, for two coders to arrive at consistent categorizations. The reliability procedure, whose purpose is to demonstrate the objectivity of the QCA, in the end, reveals its interpretive nature.

Atop this problem, is the quantitative content analyst's basic assumption that the students are reading each other's messages. Even this assumption proved untenable in my attempt to interpret the student interaction in this computer conference. When I asked Ruth why she hadn't joined a particular conversation, for instance, she confessed that she was busy with other things that week and was unaware of the exchange.

As they participate in their conference, the students are engaged in a similarly interpretive enterprise. Recall Marshall's reading of Ruth's response to his messages: He continually interrupted his reading with comments such as, "I never said that" and "which I never said." Moreover, when Ruth commented on the exchange, she sighed, "I think he is very young and naïve." Marshall, as he wrote in his introductory message, is neither young nor naïve:

> Hi Everyone,
>
> My name is Marshall. I'm the old guy of the group, I would guess. I received my BA in political science in 1976, spent a year as an organizer for the New Democrats, and owned a manufacture and distribution business for over 20 years. A little over two years ago, I returned to get my B.Ed. and have been substitute teaching since last March.
>
> I have children, the oldest with children of her own (yeah, I'm a grandpa), one that is finishing her BA, and our afterthought, our son in high school.
>
> I entered this program primarily to fuel my reawakened intellectual curiosity. Those twenty years in business were not really the most

> demanding for the brain! I look forward to working with all of you over the next fifteen weeks and wish you all the best.

Literary theorists working in the domain of reader response theory have grappled with these issues. They conclude that the meaning of the text is never self-formulated. As Jauss argued, "A text is not an object which stands by itself and which offers the same face to each reader" (as cited in Seldon, Widdowson, & Booker, 1997, p. 54).

This is an important assumption for students of educational interaction to understand. It is particularly relevant for analysts of interaction that occurs at a distance over an asynchronous, textual medium. Schegloff (1991) explains why:

> Given that hearers have resources available for addressing problems in understanding, should they arise, the resources of natural language need not, for example be unambiguous. They need not have invariant mappings of signs or symbols and their signifieds. They need not have a syntax that assigns only a single interpretation to a given expression. They need not be limited to literal usage, but may be used in idiomatic, metaphoric, and other nonliteral tropes" (p. 155)

In a face-to-face setting, Schegloff is saying, misunderstandings and misinterpretations are not necessarily debilitating. The events that occur after we finish our conversational turn provide ample evidence of whether or not we have been understood, and it is an easy matter to correct them. Evidence can take many forms, including acknowledgements such as *back channel responses* (yeah, uh huh, mm), assessments (e.g., Gosh, Really? Good god!), and relevant next turns (e.g., an answer following a question). In a face-to-face situation, speakers and hearers also make use of indicative gestures (e.g., pointing, touching, looking at the subject under discussion), referential instalments (e.g., "You see that car?" "The red one?" No, the other one." "Yeah.") and other interactive processes that take advantage of the shared setting. Many of these situational and interactive features are unavailable to participants in a computer conference, and the ones that are, are not always utilized.

Typically, quantitative content analysts are only able to reliably identify the most objective features of a communicative environment. Berelson, who defined the technique in 1956, used it to count the number of times a specific word appeared in newspaper columns. Flanders (1976) contrasted the percentage of classroom talk that was produced by the teacher and by the students. Nonetheless, even these crude categorizations are difficult to substantiate in distance education environments. In an influential early study of interaction in interactive television, Fulford and Zhang (1993) showed that students' perceptions of interaction were more important than actual interaction. Sutton (2000) extended this analysis of *vicarious interaction* to computer conferencing and found similar results. Both studies are consistent with Moore's (1973) germinal insight that the students' subjective experiences of distance are considerably more influential than an objective analysis. In the end, I no longer want to talk about the meaning of a conference transcript without taking into account the participants' interpretation of it.

Objectivist epistemologies are at odds with social constructivist notions of the role of peer discussion in learning. If we reject these models of learning, we must reject the corollary analytical techniques. When I conduct research on computer conferencing in the future, I will employ data collection and analysis techniques other than QCA.

Conversation analysis (CA) is a data collection and analysis technique that focuses on interaction and shares the assumptions of social constructivist research. It is a well-developed domain that has much to offer the study of computer conferencing. This has been demonstrated in Roschelle's (1992) CA study, which is germinal in the field of *computer support for collaborative learning* (CSCL). While working as an intern at Xerox PARC, Roschelle documented how two students cooperatively constructed situations and concepts, built on each other's ideas and intentions, drew new ideas into a common conceptual framework, and repaired divergences. This type of documentation is rare in the computer conferencing literature. Similarly, Arnseth, Ludvigsen, Wasson, and Mørch (2003) described how university students working at a distance shaped and reshaped their intersubjective understanding through the course of a problem solving task. Using conversation analysis, Dingley (2002) was able to distinguish between what she called *monologue* or *cacophony* and *productive discussion* in a synchronous chat used to support project based learning.

In the previous section, I argued for an interpretive understanding of the role of computer conferencing in post-secondary distance education. Previously, I demonstrated that the mutual critique model of computer conferencing was a poor fit with the particular conference that I studied, offered a possible explanation for this, and I suggested ways to incorporate that model successfully. I then provided a similar analysis of the social constructivist, meaning-making model of computer conferencing. The mutual critique model and meaning making model are the predominant conceptualizations of computer conferencing in post-secondary distance education. Therefore, the results are troubling. They prompt fundamental questions about whether this technology should be included in courses, and if so, the way we expect students to use it, the outcomes we anticipate, and our approaches to assessing their participation.

I argued that two issues have led our understanding of computer conferencing astray. First, our conceptualizations of its role in education are often based on extrapolations from its objective properties. Unfortunately, whether or not students perceive or orient to these attributes is unpredictable. From my social constructivist perspective, this was obvious, and a cursory review of the literature indicated that there was little reason to expect that they would.

Second, from its inception, computer conferencing has been regarded in terms of information theory. It was invented in 1973, according to one of two competing accounts, by Murray Turoff—a professor of information science at the New Jersey Institute of Technology, and it was Turoff and his colleagues who made some of the most significant and formative contributions to its study. Supporting this conceptualization was an understanding of interaction in distance education that arose in an era of correspondence courses. Despite radical developments in ICTs, this original understanding has continued to cast its shadow. The idea of interaction formulated during the first and second generations of distance education continue to influence the way that we think about asynchronous, textual, multi-point communication.

It need not. Current technologies allow us to move beyond metaphorical uses of the term *conversation* toward literal ones. If we do so, we can exploit what students of talk-in-interaction argue is the central technique for knowledge co-construction and collaborative meaning making: co-present interaction or *conversation*.

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